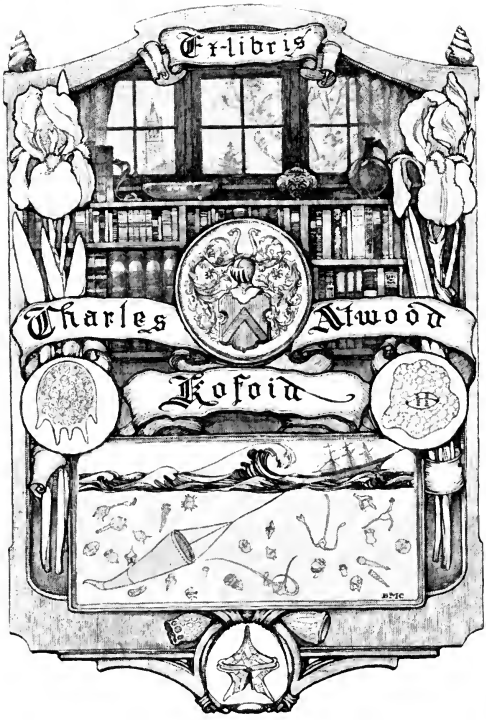
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INDUSTRIAL COLONIES
AND
VILLAGE SETTLEMENTS
FOR THE CONSUMPTIVE

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AND
VILLAGE SETTLEMENTS
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BY

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WITH PREFACE

BY

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CAMBRIDGE
AT THE UNIVERSITY PRESS
1920

PREAMBLE AND INSCRIPTION

THE greater part of the observations contained in the following chapters have already been published, and, whether separately or under our joint names, not a single line has been committed to print until, in consultation, we have given it most careful consideration.

The gist of the *Introduction* was offered in the form of an address (by G. S. W.) to the National Association for the Prevention of Consumption at its 18th Annual General Meeting, July 1917. Chapters I, II, III and VII stand substantially, as contributed by us to the *Lancet*, 24 November 1917, p. 779, 3 August 1918, p. 133, 20 September 1919, p. 526, and 8 May 1920, p. 1041; these we are allowed to reprint, a permission for which we tender our thanks to the Editor of that Journal.

By the courtesy of the Editor of the *Journal of State Medicine* we are enabled to include Chapters IV and V which were delivered as Lectures (by P. C. V.-J.) at the Royal Institute of Public Health (*Journal of State Medicine*, June 1919, p. 161 and January 1920, p. 12). Chapter VI now appears for the first time.

The index has been compiled by Mr F. G. Binnie.

It had been our intention to write a detailed and ordered account of the development of the Colony but events followed one another so rapidly and so many enquiries and demands for information as to the work done at Papworth both in the Colony and in the Village Settlement have been made that we decided merely to revise these several articles and publish them practically as originally printed. As soon as may be, however, we hope to give an account of the various trades started in the Colony and of other matters of moment involved in the treatment and training of consumptives, and the development and management of a Village Settlement.

In days gone by it was the custom to dedicate a book to a living patron: we offer our tribute to the living memory of two great statesmen who have passed from amongst us—the late Lord Rhondda, who, during the period he held office at the Local Government Board made plain the way to a Ministry of Health, so long advocated by our Regius Professor of Physic, Sir Clifford Allbutt—and the late Sir Robert Morant, K.C.B., to whom those interested in the welfare of the consumptive owe a debt that can scarcely be reckoned and never repaid. A great civil servant, forceful in his dealings with others but unsparing of himself; conscious of his own powers, but ever ready to receive and consider suggestions—and to act upon them—from others; he, more than any other non-medical man of our time, laid down the lines of rational treatment and training, not only of the ex-soldier consumptive but of the civilian.

G. S. W.
P. C. V.-J.

CAMBRIDGE.
10 *June* 1920.

PREFACE

A THOUGHTFUL patient said to Professor Sahli: "What do you think that the patient most desires of his physician?" "Why of course healing." "No!" "Well at any rate amelioration?" "No, not that either." "Relief at least?" "No, Doctor; from his physician the patient asks for Hope." When I first entered into hospital practice there was a bench in the Out Patient Room at Leeds on which were set aside the "incurables"—the phthisical, the infantile palsies, and so forth. The "incurables" were sent home again; we forgot them, and they faded away. When I was a very little lad a kinswoman fell into a consumption, and it was thought that a trip to Ventnor, whither she was sent, would be a nice change for me! Well do I remember now that hot south sitting-room with keyholes plugged, and listings pasted around every crack in door and window; the hacking cough of the patient, her creepings out of doors, swaddled in wraps and a respirator, and only when the sun came out. So she went her way. Later, when on a Long Vacation tour in Italy, I shared a cabin with an Italian gentleman far gone in phthisis, who told me I had no business to be with him, as the disease was infectious. So all the Italians then believed, and this was my first lesson on that aspect of the matter. Soon after taking my degree I happened to stop in a house where Dr Archibald Smith was also a visitor, and the first ray of hope in phthisis was shed into my heart by him. And I began to wonder how one's patients were to be sent to Quito! Then arose a friendship with that pioneer Henry Bennett, and, while on a visit to him in his garden at Mentone, came reports to us of Davos; a story so amazing, that I must needs post off at once thither to see the miracles. When there, with our experience of the consumptive of that day, I wondered where the patients were! I saw only ruddy-faced people, full of hope and fun, clearing the tables of victuals. On my way I had met Addington

Symonds, and we together examined the patients, sampled the climate and other conditions, and argued with Unger and Ruedi. Then for the second time came "Hope"; more solid Hope. Given a fairly early case, and three years, and recovery was in the offing. And so we went on cheerfully with Davos. But Davos was not for every one; nor was every case an early one. Then came the discovery that lower altitudes would do if certain conditions were obtained; and so arose the great sanatorium movement. But slowly we found that patients could not spend their lives in sanatoriums; and one day on making my way up to one of them in England, I met on the way patient after patient, slouching along, bored to death with themselves and with each other; and even worse in morale than in body. Better discipline and better notions of therapeutics mended some of that; still I could not forget those listless saunterers, and it became evident to some of us, however unwillingly, that Hope was drooping again. The sanatorium was doing a great educative work no doubt; but at the end of its four or six months—what then? To send the patient away with recommendations about "light jobs," and a "régime," was almost a mockery ; or quite. What about the wage, and the family to be supported? The next lesson was brought home to me by a visit with other commissioners to certain cities, concerning some such problems. Before me now I see a gaunt hollow-eyed man, coughing, and leaning against the wall as he tried to talk to us, saying that his "mates" when he came out of the sanatorium—good fellows as they were—had bought him a "milk walk"(!) that he might creep round, and earn a bit. The brave wife, shawl on head and mill apron on, had just come from the factory, and apologised for the dirty house—as well she might. The poor thing was working all day at the factory to keep the wolf from the door. All being dragged down together into the pit! What is the value of a good house, or a clean house, if no wages! What is there for the children? And what is to stop the infection!

Who then would have the imagination, the initiative, the business capacity, to lift this burden, like lifting a world?

Well, there was no Atlas, but like most great things the lift began in small beginnings, in a Robinson Crusoe adventure at Bourn of which the reader will learn much in the following pages. The story shall not be spoiled by any dilutions of mine. Hope is the cement which holds all the structure, which has long outgrown Robinson Crusoe; hope holds all the new colony together. And hope not for early cases only, but also for "middle" cases; and hope not taken away even from the heavily stricken, for if such an one is to sink under his affliction he is not segregated with incurables; he feels that even for him there may be a chance. And, for the less severely hit, the hope of promotion is added to that of recovery. That under graduated work this comes about will appear in these pages.

How all this result has arisen out of the experience, imagination and active sympathy of the Cambridge "After-care Association" and its Medical Officer, and how it has been financially possible, is fully described in this book. For example, let me direct attention to some statements by patients on p. 26. It is no longer necessary to refine about "complete cures," we must speak rather of "arrests"; but it will be seen that even, with this rather chastened hope, the patients can become content and indeed happy, because the future is no longer a bad dream, or is gone like one; no longer is the feeble man to be tramping after work; and failing to get it; or failing in it when got.

Although it is neither my place, nor the present duty of the authors, to recount the great and successful labours of others in this cause, it is not to be supposed that we forget them; but we do think, even those of us who are mere lookers on, that we have moved one step forward. I will close this Foreword with one maxim: Whosoever undertakes to follow in the same way, and proposes to start a colony, let him first find the man.

CLIFFORD ALLBUTT.

10 *June* 1920.

CONTENTS

INTRODUCTION

THE relative, if not absolute, ignorance of the cause, course, and treatment of consumption or tuberculosis in its varied and protean aspects has only recently been succeeded by a more rapid and consistent acquisition of knowledge resulting in the evolution of comparatively successful methods of treatment. The first step in this was the swing over from the sheltering and coddling of the consumptive to open air treatment, the avoidance of close and darkened rooms and the exposure to fresh air and sunlight. Almost synchronous with this movement came the contention of English, French, German and Danish observers that the disease had all the characters of an infective process, confirmation of this being afforded by Koch's demonstration of the presence of a special and characteristic bacillus in the degenerating tissues of the tuberculous patient, animal or man.

Thence onwards there has been an increasingly intense study of the conditions under which the disease develops in the individual and spreads in the community; of the most effective means to be taken to prevent infection, to build up the "resistance" of the possible patient, to render foci of infection harmless or less dangerous, to interfere with the accumulation of infective material and to prevent the passage of such material from one individual to another, to localise the disease resulting from infection in the individual, to remove dead and diseased tissue and to allow of the healing of the damaged tissue even though it be impossible to ensure the "replacement" of the tissue that has been lost as the result of the activities of the infecting micro-organism—a tissue parasite.

Many vigorous, but not always well considered efforts were made to carry out methods of treatment often based on sound principles. It was found that men and women in the early stages of consumption when removed from unsatisfactory

environments and sent to live in a good climate often threw off the disease, or recovered so far that they were able again to take their place in the world and continue their work with comfort to themselves and advantage to the community. To the good climate was ascribed the credit of the "cure." The freedom from care, daily worry and anxiety, the rest, the good food, the regular life, the peace of mind engendered in the new surroundings, in most cases received little credit for the part they played in effecting improvement in the patient's condition.

The early cases did so well under these conditions that the "cure" came to be recommended for advanced cases and in the days of the sailing vessel these advanced cases, ordered to sunny climes, became most dangerous sources of infection to those who, accompanying them, were, during stormy weather, battened down with them in small and close cabins, and thus exposed to massive infection. In later years when transport by steam came to be more rapid, the danger of infection to others through confinement to the lower deck with cases of open tuberculosis became less, but the danger to the patient through being exposed to rapid changes of temperature and clime were increased, and it was ultimately recognised that journeying to, and residence in, warmer climates were productive of as much evil as good.

Some patients who should have been allowed to rest and many who should have been allowed to die quietly and in comfort were dragged, in a vain search for health, to distant lands, there to become burdens to themselves and centres of infection to others.

Then came the day of the sanatorium with its fresh air, good food, rest and absence of worry—a step in the right direction, but not the end of the journey. Those who were encouraged to enter sanatoriums and to trust to the sanatorium treatment only, too often became valetudinarians of a most pronounced type. Self centred, almost afraid to move without the advice of their doctor, they were a burden to themselves and a care and anxiety to their friends. Occupation or exercise—as occu-

pation or exercise—was called in in a most haphazard fashion, measured walks and stereotyped and useless tasks were prescribed for the patient, and he was led to believe that until he was well and strong he must take the utmost care not to depart from the most minute instructions laid down for him. The poor wretch was constantly thinking of his temperature and looking out for haemorrhages. He was almost afraid to breathe lest he should take too deep a breath and disturb something or other; he became wearied of the monotonous and aimless existence to which he was condemned. Continually thinking of what might befall him, dreading and certainly never encouraged to engage in useful work, and not taught that what he must avoid was not work but overwork or too strenuous work and too little rest, he not only lost heart but came to look upon sanatorium life as then understood as the only life that he could live; and of that he was filled with dread.

It is not contended that this was the invariable outcome of the sanatorium system, but we are convinced that the valetudinarian frame of both mind and body was far too commonly developed, especially in those not possessed of great determination or of wise friends and advisers who would warn them against this danger and help them to avoid it.

On the formation of the Cambridge After-Care Committee and the foundation of the Bourn Colony these aspects of the question were uppermost in the minds of those interested. The methods adopted by those who had done pioneer work were closely studied and the results obtained by them noted and checked off. Many patients had undoubtedly been benefited, temporarily, at any rate; some were able to return to their former or some slightly improved manner of life or were capable of doing a fair day's work at some lighter and more suitable occupation, but the results of treatment as a whole were extremely disappointing. It had been laid down by those interested in sanatorium work that cases for treatment should be selected with extreme care—only very early cases were to be admitted, in order, it was said, to give the system a chance of proving successful. It was found, however, that the provision of a

separate sanatorium, for "early cases," home and dispensary treatment or the hospital for "middle cases," and hospital or home treatment for the "advanced cases," involved a permanent selection and classification of cases that was obviously impossible. As the result of our enquiries and observations it became evident to us that for the work to be carried on properly and successfully all three types of patients must be accepted for treatment, and that, as the cases seldom or never remained of the same type and degree for any very prolonged period, all must be housed and cared for, not under the same roof, certainly, but in the same colony or settlement.

From that day onwards we have been learning and developing. Mistakes, many and grievous, we admit, and, as will be seen from what follows, much that was considered to be satisfactory three years ago, to-day falls short of our ideals. At one time it was thought that most of our difficulties would be cleared out of the way, if, after a course of treatment and training, colony patients could be placed in the works of sympathetic employers and there enabled to earn a wage commensurate with the hours they were actually engaged on work. This plan proved to be impracticable. It was found that difficulties were constantly arising even where the best and most sympathetic employers were concerned; whilst even greater difficulties were encountered when the employees came to be considered and consulted. The Friendly Societies, however, instead of raising obstacles in the path of progress as was at one time feared they might, became a tower of strength to the movement and provided a coign of vantage from which fresh advances have since been made.

Then the "out-of-door job" in place of being a stand-by for us came to be a stumbling block of the most formidable character. Farming, one of the most strenuous of occupations, was found to require a prolonged period of training extending over many seasons during all of which the patient must be able to carry on continuous work. Moreover, the pay is far from sufficient to supply full or even extra nutriment for the patient and his family. The same applies to gardening on any exten-

sive scale; whilst worked with a single pair of hands, and those the hands of a consumptive, small holdings offer no prospect of more than a scanty living, if that. A delay of one or two days in trenching, sowing, pruning, cropping and the like—and greater delays than this are almost inevitable where a single consumptive patient is doing the work—may make all the difference between an adequate return for labour expended and a definite loss.

Again it was thought at one time that the rôle of handy man was one in which the consumptive might shine, but experience soon brought it home to us that he could only be the product of an extended course of training, never of an intensive process of education. The craftsman or skilled artisan must serve a long apprenticeship to his job. This, however, is not necessary where repetition work only is involved, and it soon became manifest that with machinery at the disposal of the colony and a few skilled workers who could train men in some one or two processes and then allot work and assemble parts, a number of men might be enabled to earn wages that would constitute a considerable addition to the income side of their weekly budget. Men might be put to their own trade if it could be carried on under favourable conditions or they might be given work as nearly like their own as possible, or work in which they take a special interest, or that they are physically capable of undertaking. The period of training must not be too extended; as much of the heavy work as possible must be done by machinery and the workers must be carefully guided and controlled by the Medical Officer as regards time and character of work.

It was obvious that some arrangement must be made to provide workshops, machinery, suitable conditions and work for all patients who can do it, and this, it was found, could be done only by organisation and centralisation, but, this being done, the key of the situation was in our hands. Accommodation had to be provided for those patients skilled in various occupations who were so far restored to health that they could be employed as experts, foremen, instructors, and on the administrative staff,

and this stage being reached and a demand arising from patients who wished to continue to reside and work at the colony, it became clear that population would always follow occupation and the settlement system *gradually* assumed shape.

In normal times our dealings are with the civil population, and with them alone, but when the Army absorbed so much of our civil population it behoved us to make special arrangements for the treatment of our tuberculous pensioners, and some such arrangements unfortunately must continue to be made for many years to come.

Those who have followed the fortunes of men suffering from tuberculous disease, discharged from the Army, realise that here we have a great opportunity to make attacks, both frontal and flank, on tuberculosis. There have been hunted out for us numbers of open cases of tuberculosis, which might be placed in surroundings and under conditions in which they ought to run a less rapid and dangerous course, from the fact that we have the opportunity to isolate, treat, and train them.

It was evident that if we could but provide means of isolation or disinfection and could limit the area over which these centres of infection might distribute infective material, we should have gone some, nay, a great, way towards cutting deeply into tuberculosis as a disease affecting the generations that are to succeed us.

The strike and strike quickly and strongly policy involved in a complete tuberculosis scheme is a policy attractive not only to "specialists," but to many of those who advocate great social and sanitary schemes that appeal to all but the most careless and thoughtless. We and they desire to see children brought up in sanitary homes and educated in well-ventilated and well-lighted schools; we wish to improve the hygienic conditions under which men and women work in peace time, and with this in view many of us have turned our attention to these matters in their bearing on our munition workers during the war. In future we shall think more of sobriety and its relation to efficiency and of economy in food in order that our children may be well nourished and our workers strong; but we must

also remember that we have to protect those who have already succumbed to infection, whether in the war against poverty and ignorance, as found at home, or in the war against savagery and political serfdom as waged by our gallant men abroad.

> "A young man broken with the storms of war
> Has come to rest his weary bones among ye:
> Give him a little earth for charity."

Where such as he are concerned we can countenance no dallying, but the little earth must not be "of a charity."

The farm colony at first appeared to us to meet all our demands and requirements better and more completely than any scheme that had as yet been brought forward; more than this, it seemed that it might provide a means of dealing efficiently with the tuberculous civilian. Further, we thought that as tuberculosis declines, as we hope and anticipate it may, both in morbidity and mortality, these colonies need not become derelict, but might, easily and naturally, be converted to the use of the debilitated, of the anæmic, and even of the constitutional weakling, or as a penultimate resort might be used as areas on which to plant general hospitals in healthy rural surroundings; or, finally, might, if need be, be returned to their original function of food production. By no possibility could they become a complete loss to the community, and in many instances their money value would be appreciated considerably because of the multifarious uses to which they might be applied.

It was accepted at the outset that the farm colony as usually connoted constitutes but a few links in a long chain, though it was also realised that, according to the genius and individuality of the builder or organiser, it may be fashioned along lines that may show various deviations, and may be utilised for very different purposes.

Who that has followed the fascinating work of Trudeau, of Walther, of Philip, of Marcus Paterson, of Lister, of Bardswell, of Acland and of Allen, but must have felt that of these pioneers each was desirous of making his colony fit into some

great scheme, and subservient to a great end? New York, the Adirondacks, Nordrach, Edinburgh, Lanark, Surrey, Hampshire, Worcestershire, South Wales, Norfolk—each has been developed on special and individualistic lines, and we recognise that not only has each founder hitched his wagon to a star, but has often managed to get a good haul on the traces.

It has been our privilege to watch the birth and development of many of these schemes, to see how the ideas and experience of an originator have moulded and projected the plan to which he pinned his faith and gave his allegiance, and to be stimulated and encouraged by the enthusiasm manifested by these founders.

Those who have made no such study are apt to imagine that the engineers of these colonies had only to put into practice their interpretation of the term and the carrying out of the details of their plan into a kind of rough open-air life, in which the work of the farm occupies the whole time of the colonist, who is supposed to live in a rough "shack," or in an open tent or to lie out on a couch of pine needles, or in a verandah protected from rain and wind, but open to every breath of Heaven—ideal, but not business; idyllic, but not productive of bread and butter for the family, or even for the patient.

It has been found necessary to go much beyond all this.

As experience has been acquired, graduated work, appropriate recreation, elementary or advanced instruction in various trades have come to be demanded as essentials of a farm colony, but the idea of isolation, of some slight discomfort, of the presence of the artificial element in the mode of life, of the separation from dear ones, of classification and even isolation have never yet been entirely eliminated, and it may safely be accepted that the public, amongst whom necessarily are our patients, have never yet realised how social and how humane, how reasonable and how effective the farm colony may be made.

The farm colony however has, inevitably, become a more and more complex organisation; indeed, those who know little of tuberculosis are apt to maintain that the doctors can have few fixed ideas as to its treatment or as to the value of sana-

torium treatment, and this, so far, is undoubtedly true, different doctors allocating to the sanatorium very different functions. It is said, for example, "see how these doctors differ even as to the results they are able to obtain." The public, of course, can know little of what the pathologist and the physician—Virchow, Villemin, Chauveau, Burdon-Sanderson, Wilson Fox, Robert Koch, E. Klein, and those who in recent years have followed in their steps, have learned as to the protean character of this disease, how varied are its manifestations and how modified may be its course in different people and under different conditions. One man's experience of the disease differing so greatly from that of another, it is manifest that we must be ready to meet and defeat it in all or any of its phases, and unless we are so prepared, we may expect to fail, in some of the cases we are enabled to study and the patients we are called upon to treat.

If financial success alone were to be looked for it would be necessary to lay out large stretches of land, to be worked by the labour of the patients, but it has gradually been brought home to us that whilst we should aim at providing the patient with suitable and congenial work, that work should be such that whilst to the patient immediately remunerative, for that is of the essence of things from the moral point of view, it should be an occupation which will continue to serve as a means of livelihood, earned under favourable conditions.

In a colony the patients must be suitably housed. Just as the workers vary in their capacity for work, so the disease is found to have advanced to various stages in different individuals, and from a man who is compelled to take several days' rest in the week to the man who can do two-thirds of a full day's work, all have to be catered for. It is obvious that the year round and in all weathers, these men if they are ever likely to be able to work at all, should be well housed but in the open—in shelters. We are satisfied of this for, amongst others, two reasons which appear to be sound: (1) The patients do so well when housed in shelters, and (2) they are slowly but surely educated by their surroundings. They come to recognise in fresh air and what it represents, not only an actual food but a

great diluent of the "emanations" from tuberculous lungs, whilst they recognise in the light, little as they understand of its action, a stimulator and purifier, and as to this we who pride ourselves on our deeper knowledge can claim no greater understanding or any less faith.

These shelters, all built by "patient" labour, can be kept clean and bright, and can be dissected and moved about with the greatest ease. By a system of telephones and bells, simple in detail but elaborate as a whole, the patients are kept in touch with one another and in direct contact with the medical officer. In these shelters men may spend a considerable part of the day—all their sleeping and resting hours. Hence they are always in the fresh air though they are never deprived of that privacy so dear to every Briton.

We have learnt how essential is the provision in such a colony of apparatus, machinery and facilities for the carrying on, not of out-door occupations merely, but of some of the numerous trades and handicrafts that go to make up our modern artisan life. A large cotton factory or a foundry cannot, of course, be provided, but accommodation must be found for the carpenter, the painter, the bricklayer, the plumber, the electrician, and similar skilled artisans, all of whom will be in request, whilst occupation could always be provided for the hand-spinner and the hand-loom weaver, the basketmaker and the toy designer and artificer.

We have, in recent years, had an opportunity of gaining some insight into the requirements of an agricultural and semi-urban district, and we thought that in the Papworth Colony such requirements might easily be met if it were borne in mind that what is required is not, in most cases, specialised skill in the management of elaborate machinery and highly technical processes, but a general working knowledge of several of them or a practical working knowledge of simple repetition processes. The carpenter, the engineer or the builder, the electrician or the chemist, we recognised cannot be fully trained in six months or a year, nor can the weaver, the dyer and the spinner, but the handy man who is so valuable, nay, almost essential to the

community, though he may be able to acquire no great skill as a carpenter, should here be able to learn repetition work. He need not be a skilled mechanic or electrician, but if he can gain sufficient knowledge of machinery and electricity to run an internal combustion engine, look after a saw bench, a planing machine, or again do satisfactory cobbling of shoes, remunerative work can always be found for him on the colony estate.

These are mentioned simply as examples, but the list might be lengthened indefinitely. When the needs of the different districts are considered it will be found that we shall have to supply even the clerk and the accountant, who will thus probably find their place in the colony. Here we saw was an opportunity, to demonstrate that, if the services of instructors, preferably tuberculous men skilled in their trades, could be obtained and financed, even indoor occupations might be carried out under conditions that make for the disappearance of tuberculosis.

If the sawdust in the carpenter's shop is never contaminated by the tuberculous sputum of the worker, and the shop itself is so ventilated that all the fine dust is carried off, we might almost say automatically from a workshop with open ventilation, we shall be able to demonstrate that men who are accustomed to eat and sleep in the open air can very well work in the open shop, and, applying open ventilation to every workshop, we may make it clear that the joiner, the estate book-keeper or the clerk may safely carry out his work in such shop or office provided that ventilation is as full and free as it is in the rooms in which he sleeps. Plenty of warm, dry clothing and warm wrists will ensure that the temperature of the body and hands does not fall too low, and given this, men can always do their work.

We now realise that every colony or settlement should be a microcosm, in which life and its occupations are run on lines so advantageous that the maintenance of health and the prevention of the accumulation of infective material are assured. At no time should massive infection be possible, and all infective material should be diluted and removed at once.

Re-infection of the patient can never then take place. In our colony the patient should be able to carry on his own trade or the work on which he will engage at the end of his period of apprenticeship under such conditions that he may feel the joy of work; that he shall gain new courage from this feeling, and from the satisfaction of knowing that it is possible under these conditions to do an increasing amount of work and to recognise that health is returning in a degree measured not merely by his feeling of "fitness," but by the amount of work he is able to do.

It is for this reason that we are greatly in favour of the simplest shelters and of the roughest workshops, or at any rate of workshops that may be imitated in the simplest fashion, and this quite apart from the fact that it is impossible to erect expensive and elaborate accommodation for the same number of patients that may readily be provided if built along simple lines. Even turning sheds and machine shops, where the groundwork of mechanical training may be acquired—a groundwork on which a special superstructure may be built up later—may be provided on these simple lines.

Finally, we come to what may be looked upon as the accommodation to be provided for the worst "failures" of our modern social and hygienic conditions—the men and women who have reached the advanced stages of consumption, of whom but few can possibly survive more than a period to be reckoned in months. At present many such patients, badly nourished and equally badly nursed, remain in their own homes, and in the last few months of their sad lives, unacquainted with the very elements of sanitation and surrounded by those who are equally ignorant, prove most active centres of massive infection. Mothers infect their children, husbands their wives, and tuberculosis spreads apace. Our experience is that the friends of such patients are often anxious enough to get them into hospitals, general or special, but that the patients themselves, in spite of the *spes phthisica*, have a horror of being separated from their friends. They are haunted by the fear of what may be the end of it all. Can we blame them, when going into

hospital so frequently means to them bidding farewell to the outside world? Our knowledge that in even some of these cases, if properly treated, the disease might be checked, affords us our chance, and points out to us a line of procedure.

In any colony provision should always be made for a certain number of hospital beds. These beds should be placed in what has been called the "temperature house," as not only advanced cases but patients "with a temperature," a mere temporary rise, can then be admitted—of course, to different wards. In these wards there is a change of company, a constant coming and going, and not merely a removal of ward-mates all going in one direction; whilst even when the very ill patient is removed, which should always be carried out before the final issue, the death of a patient in another ward does not produce the depressing effect that would be produced were there not this constant stream of coming and going "temperature" patients. The Italians, with their quick wit and their sharp eye for the bright side of things, have, with their fever rest house, achieved more for the cheerfulness of the tuberculous patient than has been effected by any other single modification of the conditions under which advanced cases of tuberculosis are treated and housed. In this they have been followed by the Norwegians.

Sir William Osler maintained that past the sanatorium stage there is often no place for the chronic consumptive. The general hospital does not like the "open" tuberculous case. Our contention is that in a colony ample arrangements should be made for the reception of these cases. The experience of the Italians and Norwegians is a pointer for us. If only the severe cases, a very large proportion of which are likely to terminate fatally, are sent to hospital, the transfer means almost the signing of a death warrant, and the moral effect is such that the progress of the disease is so much the more rapid as the depression of the patient increases. If, however, patients suffering from temporary fever—patients in many instances able to undertake work and to benefit by it—are sent to the fever rest house, a considerable proportion of those admitted are, at the expiry

of a period of rest, ready to resume their place in the colony, to undertake carefully graduated work under the advice of the medical officer, as occasion may require. For this reason we would have in connection with every colony a fever rest house, in which are provided all the comforts of a hospital combined with the open-air life of a sanatorium.

Concerning such details as nursing and the running of the colony it is here unnecessary to speak, but we are of opinion that one principle should run like a golden thread through warp and weft of the whole fabric of the colony, and that is that the patients should do as much as possible of the work of the colony and, except in the hospital, even the overseers should be tuberculous patients having come to the end of their term of treatment and training in the colony. These may remain after they are "cured," as their experience cannot but prove of value and encouragement to those who come in suffering the ills associated with doubt and difficulty; such old stagers, proud of their accomplishments in the band of health-finders, are not the worst distributors of the gospel of their own evangel.

We know that we are now treading on dangerous ground, indeed, that we are giving vent to most unorthodox sentiments, but we believe that we have right on our side.

Of course we expect to be told by a number of our friends who have had experience of sanatorium treatment that we are now going beyond the scope of what may be called the conventional colony. It is because of this criticism that we here set down so definitely and fully the lines on which we think such work should be carried out, as, in spite of a good deal of criticism levelled at the Bourn Colony and at the Papworth Scheme, we are satisfied that it is impossible to keep tuberculous patients in water-tight compartments. As patients improve or deteriorate in health they require different treatment, but the moral effect of changing the "category" of a patient is often very great indeed, and it will be very difficult to convince us that in extending the scope of the work of the colony, we have done anything but improve the chances of recovery of the patients.

Farm colonies, or any other colonies or settlements, if used merely as places in which men, unable to do other work, are allowed to carry on perfunctory occupations, simply for the purpose of keeping them in the fresh air, cannot be looked upon as anything other than sanatoriums. The work adopted on a colony, whilst conforming to all the requirements of sanatorium work, should be characterised by two additional features: It should be so selected and arranged that in carrying it out the patient receives definite training in a wage-earning occupation, by which he may profit without his health being interfered with in any way. It may be the man's own occupation, or it may be another; if his own, it should be carried out under conditions so far improved that he does not revert to his old surroundings.

It has to be borne in mind that, as a rule, it is not possible to raise a patient's immunity to tuberculosis to a higher point than that enjoyed by him before his attack. A patient, however, may be placed under such conditions that he is not again exposed to any massive infection such as led to his breakdown in the first instance.

The second feature of this work should be that in doing it the patient must feel satisfied that it is useful work, that he is earning money, either for himself or others, in carrying it out, and that it will be the same or of greater value to him than it is at the time at which he is serving his apprenticeship to it in the colony.

There should be no useless work in a colony. It is just as easy to grade *useful* as *useless* work. Many of the so-called farm colonies now in existence can be said to be nothing more than sanatoriums writ large, and until we grasp the idea that *useful work and training should always be combined with ordinary sanatorium treatment* we shall never get the full value out of our colonies[1].

[1] In "A Criticism of the London Scheme for the Prevention of Tuberculosis," G. H. Dart, Tuberculosis Officer and Deputy Medical Officer of Health, Metropolitan Borough of Greenwich, speaking of Farm Colonies and Working Centres, has gone some distance towards grasping this fundamental principle. He

One outstanding advantage of combining sanatorium treatment with colony training is that time is being utilised to its full extent, and the treatment may be extended without the patient feeling that valuable time is ebbing away—time that might be utilised in earning something for those dependent upon him. Consequently he is willing to remain longer in the institution, with a correspondingly greater prospect of a more lasting "cure."

The six months' training following the six months' treatment follows as naturally as day follows night, but either may be extended and they are certain to overlap. Then, should a longer period of institutional treatment be necessary, a patient earning part wages, and having a vision of earning a larger wage at no distant date, is much more likely to be content to remain during the full period necessary for his complete restoration to health than if the work that he is doing is in no sense profitable, even though his dependents may be receiving all the allowances to which they are entitled during his period of detention in the institution. This is specially true if the patient sees some prospect of being allowed to remain as a settler in one of the cottages of the village settlement and a member of the industrial section, when his period of probation—of treatment and training—is completed.

It is said that we are here attempting too much, and that advanced cases should be sent to special and general hospitals—

writes: "The absence of these not only means that the money spent on sanatorium treatment is being largely wasted, but that a measure absolutely necessary for the success of the whole anti-tuberculosis campaign is being neglected. It is not the slightest use to send a man to a sanatorium for a few months if nothing further is to be done, and if he is to be permitted to slowly relapse and become an advanced case, or to be kept alive as a chronic carrier of infection by further short periods of sanatorium treatment. The cost of keeping a patient long enough under treatment at a sanatorium to permit of his immediately, on discharge, living the usual life of a healthy working man is prohibitive. The object of a farm colony and working centre is to permit a patient, while completing his cure, to improve his working capacity to the full standard; to protect him, in fact, while disabled, in as inexpensive a manner as possible from the full stress of the effort to earn a living, and also to train him so that he may find it possible to earn a living under suitable conditions." *Brit. Journ. of Tuberculosis*, London, 1920, vol. XIV. p. 65.

partly, of course, that the disease may be studied by those who, in after life, have to treat it. We are afraid, however, that so long as tuberculosis is with us there will always be these advanced cases, for the reception of which there is at present no other place than the hospital—general or special—and we are now considering the treatment of cases of tuberculous men and women, who have to be persuaded that the best chance of recovery they have is afforded in the colony.

Every colony should have its sanatorium branch. Sanatorium physicians, in this country, following the lead of Marcus Paterson and R. W. Philip, are convinced that there are but few tuberculous patients who, after a comparatively short period of complete rest, are unable to undertake some light work, often with great benefit to themselves as regards the checking of the tuberculous process. This, in the first instance, cannot be very remunerative, but it supplies a moral and physical stimulus of inestimable value in giving confidence and promoting cheerfulness and, as time goes on, those in whom the disease runs a favourable course are greatly encouraged that they are able to contribute an increasingly large proportion of the cost of the maintenance of their family by the labour of their hands and the sweat of their brow.

Nordrach has been copied and modified times without number—consumption hospitals have been studied and their place in a big scheme shifted here and there, but ever and always the evolution appears to have been on right lines and in the right direction.

After-care, with its colonies and settlements, its distribution of patients to appropriate spheres of labour, has been a fertile source of discussion, the arguments running parallel or converging rather than becoming divergent. It is thus coming about, with so many working, and there being so many points of contact, that each section of treatment and training is gradually assuming its proper proportions, and to-day we are in a very much better position to give a considered opinion as to the relative importance of the colony in the various schemes

of treatment than we have been at any period in the history of the treatment of the consumptive.

Whatever may be our individual opinion as regards the number of tuberculous men admitted into the Army, and as to the effects of Army service upon them, there can be no doubt that we must now recognise that as time goes on many such cases will have to be provided for temporarily whilst their health and physique are being slowly built up, and that for many permanent provision will have to be made.

It will be well for us as a nation if we have the foresight to look upon any expenditure on the treatment of such cases as a capital charge spread over five years, let us say, and to recognise that the more capital we now lay out on the development of a scheme of after-care and especially in the establishment of colonies for the building up and support of individual consumptive patients, whether soldier or civilian, the fewer will be the calls made upon the taxpayer of to-morrow.

In all this the patients themselves have been exploited, not as regards work, for they receive every penny that is earned in the industries, but in their ideas and suggestions as to the best methods of developing and building up the industrial colony. Each man has been asked to contribute his mite of information and experience; moreover the colony has been built up and run by the labour of the consumptive, and those who are in the place for any length of time come to think, and rightly, that they have had a hand in the completion of the colony in which they live and work.

We realise that much of our early work was crude. We make no claim to be immune from criticism, but we are prepared to maintain that, beginning where others had left off, we have seen develop, first at Bourn and then at Papworth, a system through which patients have been kept alive, have been able to do useful work, to earn a reasonable wage, to live comparatively contented and happy lives, to look forward to having their wives and families with them again and to regain confidence and with it a sense of their value to the community.

We do not claim that a perfect and therefore rigid system

has been evolved. We acknowledge that much still remains to be done, but again we claim that nowhere have such results been obtained, that in no sanatorium or colony yet instituted have the patients stayed so long, done so well or been so wholeheartedly interested in their work and welfare.

As to the value to the community at large of thus localising the patient by suitable measures and interfering with the spread of massive infection there can now be no two opinions in the minds of those who have had experience of the colony and its working[1]. We are turning off the tap before we begin to empty the trough. As time goes on, we hope to make provision for having the children of the settlement taught in open air schools, for a communal kitchen where well-cooked and nutritious food may be obtained at moderate prices, and thus complete the scheme and fill up some of the gaps that still exist.

With the Hospital at one end of the scale, the village settlement at the other, and the intermediate rest and temperature houses, open air shelters, hostels and workshops, each and all ready for his reception, the patient gradually gains confidence; he may be in the lowest grade, but he always keeps his eye, his hopes and his aspirations fixed on the highest as being attainable, not only for himself but for those dependent upon him. He is no longer a valetudinarian but a useful and productive member of society, a man who, though a consumptive, has learned to be a consumptive, to lead the life of a consumptive and even to enjoy that life.

We refer to the psychological factor in the treatment of the consumptive as an important influence making for success or failure in our work. Indeed this with satisfactory nutrition, suitable mental and physical occupation and sufficient rest,

[1] Professor Delépine writes: "*It is better to attach too little than too much importance to the determining influence of predisposition.* We can hope to control tuberculosis permanently only if we take *comprehensive and thorough measures against infection*, but in doing so we must keep in mind that there are predisposing circumstances which call for special measures....Finally, it must always be remembered that, accidentally or not, several factors generally act concurrently, and that their relative importance varies according to circumstances." *Brit. Journ. of Tuberculosis*, London, 1920, vol. XIV. p. 64.

and fresh air, cleanliness and good hygiene, may be said to be the three limbs of the tripod that bears the none too stable life of the consumptive and, in the colony and settlement this tripod is seen to assume its highest stability and lowest centre of gravity. In the following pages there will be found withdrawals, repetitions and reiterations, for, in collating our experiences, published at different stages of the development of the colony system, we find that certain elements had to be scrapped as we went on whilst others, tried and proved, made good their claim to retention in the scheme and had to be reconsidered because of their new relations and surroundings, and with each reconsideration some repetition was necessary. This, after all, may be no great disadvantage as we are considering a scheme where principles play a vitally important part but where, in the long run, success depends very largely on the proper carrying out of detail. We have decided, therefore, to give the papers substantially as they were first published.

CHAPTER I

THE "EARLY CASE"

RESULTS OF SANATORIUM TREATMENT

SANATORIUM treatment is on its trial. Insurance Committees have been following up with critical eye many of the cases that have received treatment at various sanatoriums. A few counties have their own sanatoriums, and have been able to observe and weigh up the results obtained from a patient's stay at these institutions for a matter of three months or so. Only comparatively recently, however, has sanatorium treatment been available for the working man of this country, and even thus early it is obvious that the results are not what we were led to expect. It is stated on very good authority that the results of sanatorium treatment vary according to the class of person treated, and that amongst the well-to-do the results of treatment are three times as good as are those obtained amongst

working men. Taken as a whole, indeed, it may be asserted with confidence that sanatorium treatment for the well-to-do is, and has been, a marked success, but that when applied to the working man the results have fallen far short of expectations.

It is obvious, therefore, that we must now study the different factors which influence these results and, if we can, profit from the experience gained in various sanatoriums, especially those where for some considerable time the records of patients have been followed up after they have received and continued treatment. It is evident that the mode of life led by the patient after he has received sanatorium treatment is of paramount importance. It is clear, moreover, that another important factor in the result is the length of time that has been devoted to that treatment, and that the unfavourable results which have been observed as following the treatment of the working man are due, in great measure, to the strict limitations of time which have been imposed by various Insurance Committees on the period of institutional treatment.

The method of procedure has been somewhat as follows. In the patient selected for sanatorium treatment the disease is often well marked; notwithstanding this unfavourable feature the period of treatment is seldom, if ever, increased, it is strictly limited to the regulation "three months." Such a method of procedure is practically useless, as is self-evident when it is remembered that the patient at the termination of this period is compelled to return to the surroundings in which he contracted the disease and is given little or no opportunity to carry out treatment which he obtained as a matter of routine at the sanatorium. It is obviously useless to instruct such a patient to "carry on" the mode of life which for three months he has been obliged to live, when in all probability he has to return to a crowded street in which fresh air and sunshine are extremely limited and the food-supply is painfully inadequate.

The first question we have to ask, therefore, and one to which we must receive an answer before condemning sanatorium treatment as utterly worthless is whether it is practicable to extend the period of the institutional treatment? The answer

must be that it is impossible, without unlimited funds at our disposal, to prolong sanatorium treatment as at present carried out. The expenditure of money on buildings would be enormous, and buildings, to say the least, can contribute but infinitesimally to the real treatment of the disease. The essentials of successful sanatorium treatment have been demonstrated, repeatedly, to be of the simplest character, and for cases which are at all suitable for such treatment it is useless to expend money on bricks and mortar, glazed tiles, and parquetry floors, when all that is required is adequate shelter from inclement weather and the opportunity for the patient to engage, under suitable conditions, in interesting and instructive work.

Causes of Failure

One of the great causes of the failure of our present plan of sanatorium treatment is the manner in which it is carried out. To begin with, the medical profession has been far too timid in the application of the principle of "work" in the treatment of the consumptive working man. The oft-repeated injunction that the man must be extremely careful, must avoid any exertion, and must keep himself in a state of perpetual fear of a sudden hæmorrhage, has been carried to extremes.

Again, it is obvious that if we desire to avail ourselves of the educational facilities of a sanatorium, we defeat our own ends when we erect elaborate buildings and equip and fit them up on the present lavish scale. A patient soon succumbs to the idea that his "cure" is more a matter of architecture than of the provision of fresh air, graduated work, and an adequate food-supply. How many patients on their return from sanatoriums have lost the moral courage to make a fresh start amid surroundings which, not really unhealthy, require but little adaptation (and the necessary courage) to be entirely suitable for the reception of patients in whom the disease had been arrested.

An institution in which the working man is educated to imagine that a life of ease is the one which he must hereafter enjoy is morally bad for the patient; furthermore it involves

a distinct loss to the general community to which he has to return and in which he will have to live and ought to work.

The patient on his home coming is thoroughly dissatisfied with his surroundings and refuses to make the effort which, in his own interest, it is of prime importance he should make. If this dissatisfaction led to a keen desire to improve his condition and that of his neighbours, much good might come of it, but as a rule the desire does not take this course. It induces, rather, a feeling of depression, the patient regretting that he is unable to enjoy the good things with which he was surrounded at the sanatorium, and without which, he has become convinced, his cure cannot be effected or completed. It is with no feeling of encouragement, then, that he attemps to restart his former mode of life. The gulf fixed is too great, and he realises, or believes that he realises, that without a more than adequate income he is powerless to start any system of reform.

To whom can he turn for help? Every self-respecting man scorns the helping hand of charity, but where in the British Isles can a consumptive be provided with a model cottage and suitable work to which to turn? There seems to be no single authority in the Kingdom by which these arrangements are made. The greatest efforts put forth, so far, are those of After-Care Associations, which offer small doles of food or money to assist the man to return to some out-of-door occupation for which the wages earned are miserably low and the labour market extremely limited.

On coming to review the occupations open to ex-sanatorium patients, it must be confessed that at present they are few in number (whilst they are limited still more in that the number of employers, until they become properly educated and enlightened, willing to avail themselves of the services of ex-sanatorium patients are, and will remain, few and far between). An ex-patient then, having for three months tasted the joys of an open-air life surrounded by every care, receiving every attention and comfort, with every want ministered to, with little to do and supplied with adequate food, unfailingly

despairs when he has to return to his own home and start afresh what he believes, from the outset, will be a losing struggle.

Direction of Treatment along Industrial Lines

To those who would condemn sanatorium treatment in its entirety, it should be pointed out that some effort should be made to correct faults which so obviously interfere with its efficacy and value. This however can only be done by first altering, radically, sanatorium treatment and directing it along industrial lines. Then if the treatment can be prolonged in such a way that the patient is enabled to realise that he can, without danger to himself, work efficiently for a certain number of hours per day, we shall have done much to overcome one of the greatest obstacles that at present bars our way to further progress.

There are two ways in which this can be done. One is to prolong the period of actual treatment at the sanatorium, the other is to provide suitable accommodation and give the working man the opportunity of carrying on the treatment in his own home: an opportunity enjoyed by his more fortunate rich neighbour.

It must be borne in mind, however, that if the treatment is to be prolonged in an institution it should be carefully remodelled and should include the performance of useful and remunerative work. The working man objects very strongly—and naturally—to useless labour, work often not only useless but irksome, savouring of the treadmill rather than of the tonic. He is quite ready to admit that labour is a necessary part of his treatment, but he is also ready to dispense with that form of treatment at the first available opportunity. Patients will readily, even with avidity, swallow gallons of nauseous fluids if given as medicine, but the appetite for irksome toil soon becomes satiated. What is the remedy? Substitute for profitless and uninteresting labour work in which the patients can take a keen interest. Encourage and stimulate them to take

an actively intelligent interest in the task in hand, and *as their working capacity becomes gradually restored let them receive a wage for the labour of their hands.*

The problem of remunerative work, both inside and outside an institution, is one of the most difficult with which we are confronted, one not lightly to be discussed or put aside. On the one hand, however anxious we may be to stimulate the interest of the patient in the task he has to perform (and the performance of that task is directly and distinctly for his own benefit) it must be borne in mind that various cracks soon become apparent whereby the man's labour may appear to leak into the gulf of exploitation. It is sometimes, nay, frequently, felt by the working man when he is called upon to perform various sanatorium tasks that, willy-nilly, he is being imposed upon, that the labour is not for his particular benefit and that he is being exploited by the institution as a free labourer. That certain working men are imbued with these notions there can be little doubt, but it cannot be accepted that they are those of working men who, as a class, have enjoyed the advantage of treatment at a sanatorium. Nevertheless, if such a feeling exists, it will soon spread, and its extension will militate seriously against good results being obtained by such institutions. It is our duty, therefore, to remove as far as possible these erroneous notions, and to do this it is necessary for us to place ourselves in the position of these patients and look at the problem from their point of view.

In following this out we immediately came into collision not only with a Friendly Society rule but also with the Law, which insists that no man may be in receipt of sick-pay whilst he is engaged in remunerative work. In Cambridgeshire, however, we have been able, fortunately, through the efforts of the After-Care Association, to overcome what was an apparently almost insuperable difficulty, and the road is now clear for the reformation of institutional treatment on colony lines.

THE PROBLEM AS VIEWED BY THE WORKING MAN

In order to obtain some light on the outlook of the working man on certain of the above points it was the practice to give to each patient who came into the colony, then at Bourn, a set of questions with a request that he would answer them as fully and as frankly as he could, the object being to obtain a picture of the man's state of mind and to gain some idea of how the problem presented itself to him. Here are reproduced two sets of answers from patients having widely different outlooks on life. One of these was an ex-employee of a large Glasgow firm of engineers, the other a traveller for a firm of engineers. The answers are here given exactly as they were returned, and are instructive as showing how clearly the difficulties of the problem of after-care is grasped by the "working man."

Views of an Engineer

Question 1: Would you be prepared to accept a situation in the country after your treatment at the colony has come to an end?—Answer: If strongly advised by the doctor, yes.

If the country is more suitable than the town for the ex-patient it follows that in the majority of cases the patient would accept with good grace the inevitable, although to do so strong prejudices might have to be overcome; but in answer to—

Question 2: What conditions of employment would you consider satisfactory?—Answer: Suitable employment must be found, and the question arises: Can sufficient employment be found of a suitable nature for the number of people suffering from tuberculosis? This must not be taken as want of faith in the doctor.

To make it quite clear, take my own case. Up to the commencement of my illness I was in the regular employment of Messrs Barr and Stroud, Glasgow, at whose shops the conditions are far in advance of any engineering firm in the U.K. Good wages were paid, and the writer was given 1*s.* per hour for a 50-hour week; all time over this was paid for at the rate of 1*s.* 6*d.* Engaged as a tool maker, I was eventually given the position of a brading hand on a milling machine. The wages of the brading hands have been advanced during the last nine months.

As this shop is in a large city, returning to it is out of the question. Would a man who has been used to good working conditions with fairly good pay accept a job in the country—say light work on a farm at 18*s.* a week with cottage? I think not.

A mechanic might be advised to take up motor-driving, but how many people realise that to pay a mechanic 40*s.* a week with a cottage is cheaper in the long run than a handy man at 25*s.*?

The writer would require a situation with regular hours, one half day a week, no Sunday work, with fairly good pay, and some prospects of advancement.

A situation hard to find. Then what work is there for this class of tuberculosis patient? I do not know; therefore it is impossible for me to answer the question of working conditions.

Question 3: Would you desire a temporary or a permanent situation? —*Answer:* Permanent. Age is a large factor which enters into the choice between a temporary and permanent situation. A married man or one with the intention of being married finds it undesirable to keep changing his mode of living and the manner of getting that living. Again, of what use is a temporary situation to an ex-patient? As soon as that employment ceases he is again looking for another job, and in the meantime what is to become of him? His resources, if any, would soon be at an end, and in a very short time his position is worse than before the commencement of his treatment.

Question 4: If not, state the reasons which influence your decision?— Answer: Not applicable.

Question 5: If a situation were found for you (at your own particular job) and you were in close touch with the colony or similar institution, what conditions of employment would you consider satisfactory?—Answer: Were the treatment to last for a long period on the colonisation system, and the patient put to work at his trade or to do work of a marketable value, I do not think any other conditions could prevail except those as between employers and employees.

Take a carpenter from Cambridge, where the rate of 11½*d.* per hour is paid, give him three years' treatment, during which time he has an average of 280 working days in a year, doing each day four hours' work. Can it be expected that he should do work to the value of £42 and receive nothing in return? This is taking very low figures, because it is more than probable that he would work eight hours a day during the last year. For the married man this would be impossible, unless his family were provided for.

A man must be allowed to retain his self-respect, independence and liberty as far as the treatment will allow; this he can do only if he is paid a living wage for his work. I do not think many men would accept voluntarily treatment under any other conditions.

Could they be compelled? I certainly think their friends would have something to say. This would matter little if there were only a few cases of tuberculosis, nor do I think that the voice of the trades unions should

be overlooked or underestimated. Would they stand by while a large number of men were put to work at various trades all over the country at wages below the general rate or no wages at all?

The cure of tuberculosis is of greater national interest than individual interest, therefore the State should make adequate provision for its treatment, also for the patient after treatment has ceased. The writer may be accused of being selfish and asking too much, but it must be remembered that the working man finds it next to impossible to help himself; he cannot create work of a suitable nature, but must return to objectionable surroundings and ultimately be a source of danger to other people: therefore, is it too much to ask that provision be made for him?

I have wandered far from the point, but probably the questioner will be able to sift from these scrapes of the pen some sort of answer to his questions. For what they are worth I should like to make one or two further remarks on the last question.

If a system of colonisation were started and it was thought necessary in the case of a married man to remove his family into the estate it would, of course, be necessary to give the family circle some advice. This should as far as possible be done by the medical officer. Visits by lady health visitors are not, as a rule, appreciated by the better educated of the working classes, and the whole thing is aggravated by the fact that public bodies usually appoint maiden ladies to these positions, and however well trained they do not understand the intricacies of the domestic hearth.

Where a large estate and a large number of patients are being dealt with it might not be desirable for a patient to occupy a shelter during the later stages of his treatment. For a single man boarding out on the estate institutions might be provided.

Where the former was in vogue I think the patient should be allowed a certain amount of discretion in the choice of place, as personally I should strongly object to board where there was tubercular trouble. Where institutions or such like are resorted to they should be designed with a view to giving each patient one place of privacy.

L. P., Bourn Colony, November, 1916.

Views of a Traveller for Engineering Firm

Question 1.—My *answer* is in the affirmative, in view of the fact that the health of myself and family would benefit in consequence.

Question 2.—Answer: In my particular case it seems rather a difficult problem to find suitable employment in the country village, as such places do not offer many opportunities to the commercial man who has received

training appertaining to city requirements, so that I am of the opinion that one could not lay down any stipulations regarding the nature of the work desired, but simply state as the only conditions that one were given a fair wage in order that a good education could be given one's children (which matter I refer to in a later paragraph) and to enable one to live in respectable circumstances.

Question 3.—Answer: This opens up rather a difficult problem in the case of the married man, as having a wife and family dependent upon one, one most naturally desires to obtain employment of as permanent a nature as is possible under ordinary circumstances, although I would state at this juncture that I am not foolish enough to imagine that any employment is absolutely permanent, as neither employer nor employee can foresee what circumstances may present themselves which would necessitate one relinquishing the duties one was fulfilling. Nevertheless, I would certainly wish to enter into an agreement whereby my services would be retained so long as I continued to fulfil my duties to the entire satisfaction of my employer.

Question 4.—Not applicable.

Question 5.—With reference to that question, I am convinced that to answer it fully one would be required to state one's views under various subheadings; therefore I propose to do this as follows:

(*a*) *Mode of living.*—I mention this first, as I consider it the most important factor in dealing with this question. One must bear in mind the fact that this scheme is intended for persons who with ordinary care and few exceptions will be in a position to carry on their daily life as heretofore. Therefore I am fully convinced that the married man will wish to have his own private dwelling in which he may live with his wife and family. Hence this is the first and most important condition I would lay down before entertaining the idea of taking one's position in connection with this scheme.

(*b*) *Nature of employment.*—I think that difficulty would arise in finding employment for some men, as in my own particular case a tuberculosis institution does not offer any opportunities for one of my calling, therefore the only alternative would be for me to accept a post of a different nature from that which I followed previous to joining the Army.

I do not consider it necessary at the moment to expound one's qualifications, but I would, under the circumstances, be prepared to consider any position of trust on the organising, administrative, or secretarial staff if such were offered me, if some mutual agreement could be arrived at concerning remuneration, which question I propose to deal with next.

(*c*) *Remuneration.*—In dealing with this question one cannot state anything definite in view of the fact that one does not know what position one would be offered, therefore one must consider to what extent one would be prepared to make financial sacrifices in order to have work and general surroundings of a favourable nature, thereby retaining that most valuable asset "good health" and also to be of economic value to one's country.

One wonders why any ex-soldier should be called upon to make financial sacrifices, when one considers that the disability from which he is suffering has been caused solely through military service, as one hears of endless committees, etc., being formed to assist, train, and find employment for ex-soldiers who have lost limbs, etc., and also to give financial assistance to dependants whilst undergoing training for a new calling if the soldier's income is reduced through such incapacity, yet the discharged tuberculous soldier is left to struggle on on probably half the income of pre-war days.

I have no doubt that the time has come when this question will have to be faced, and I fail to see why some post in connection with a sanatorium or similar institution could not be offered and the salary supplemented by a permanent pension, thus making his income near that which he was in the habit of receiving before his patriotic instinct took him to the recruiting office, full of health and energy.

I venture to think that the reader may think my remarks are sentimental, but I feel I cannot find words to express my feelings of indignation towards those responsible for the welfare of the discharged tuberculous soldier.

(*d*) *Education of children.*—This point must not be overlooked in accepting any post in connection with the scheme.

It was my ambition in pre-war days to endeavour to attain some position which afforded remuneration sufficient to allow one to devote a sufficient sum of money to this matter, as I consider it most essential that one's children should be given an opportunity of receiving a sound education, and therefore I should not consider the country village one of the best places to receive same. I have no doubt, however, that some arrangement might be arrived at whereby one's children could be sent to a boarding school if one's income were sufficient to defray expenses.

I now close, trusting that the foregoing remarks will be received in the spirit in which they are penned, my endeavour being to offer some suggestions which would allow the discharged tuberculous soldier to become a national asset instead of a danger and an encumbrance.

A. H. C., Bourn Colony, August 18th, 1917.

Consideration of Above Answers

These answers to the questions submitted bring out one or two points which are well worth consideration. One is the very important fact that both patients realised how essential it was for their recovery that they should place themselves for some considerable time under conditions insisted upon by the After-Care Association. They do not hesitate about this; any hesitation felt, as illustrated by these two particular sets of answers, and all who returned answers are practically unanimous on the point, is due to the fact that no concrete proposals, no practical propositions, are ever placed before them. It is, as Paterson has repeatedly said, the height of folly to say to these men, "You must find a light job in the country and carry out the treatment there." Would anyone in his senses make such a remark to a well-to-do patient? Of course not! he is advised to live under conditions which we know are within his reach. The only difference is that the well-to-do patient has, at his own expense, the opportunity to live under these ideal conditions—conditions not available in the case of the working man. To the tuberculous soldier, and to the tuberculous civilian working man alike, an opportunity should be given to follow out medical instructions under improved conditions. The generous pension given by the State to tuberculous soldiers will, if properly handled, be the means of establishing the principle of "equal opportunity," a valuable phrase, but hackneyed from its frequent repetition in another sense. The same opportunity should be given to the civilian working man.

Provided that the surroundings are healthy and adequate the patient may be allowed to return home, but he should then be provided with a course of after-care, ensuring an adequate food-supply and that the conditions under which he lives, and the rooms and shops in which he works, are not obviously undesirable and unhealthy.

CAMBRIDGESHIRE AFTER-CARE SCHEME

The following are the lines on which the Cambridgeshire After-Care Scheme has been inaugurated, and, working in close co-operation with the Colony system, has obtained good results and confidently anticipates still better.

The Cambridge After-Care Association was formed for a very special purpose. It was designed to help such cases as presented certain favourable features—so to assist patients that the benefit of sanatorium treatment might not be wasted but might be considerably prolonged, it being hoped that the great gulf existing between sanatorium conditions and those of ordinary life might be bridged over, partially, at any rate.

In any scheme of after-care it is obviously useless to treat all cases as if they were alike. The difference existing both as to the extent of the disease and the resistance which the patients offer to the extension of the disease, as well as their social, working, and other conditions, must be studied separately.

Cases of tuberculosis are divided into three categories. Early cases, which are most favourable for sanatorium treatment; middle cases, which, as a rule, are not so favourable; and advanced cases.

Early Cases, Gradual Return to Suitable Work

In the first category after-care is designed to place the patient in such favourable conditions that the maximum amount of benefit may be derived from a stay at a sanatorium, *and that such benefit shall not be wasted when the man returns to his former occupation.* Again, after-care in this group is designed to enable certain of the patients to take up more suitable occupations than those on which they were engaged when they contracted the disease. The working capacity of such patients varies greatly, but as a rule a large proportion of them can be allowed to work for almost, if not quite, a full working day. It is really a question of time and grading, for

in many cases if the work is resumed gradually the patient adapts himself to full work more readily and for much longer hours than if he is at once plunged into full work on his return from a sanatorium.

The principle which has been taken advantage of in the Cambridgeshire After-Care Scheme is that which enables a patient to resume his former occupation gradually, if this is suitable, under conditions as nearly ideal as possible. The great dividing line which separates the working man from his more fortunate neighbour is that involving the presence or absence of the opportunity of gradually resuming a former occupation after treatment has been carried on for a considerable period, during which the patient has had to lead the life of an invalid. A well-to-do man never thinks of returning to full work immediately on his discharge from a sanatorium. He takes up his tasks very gradually. He has no anxiety as to his financial position, and has no difficulties about the provision of an adequate food-supply for himself and his family. He has ample opportunity of taking long rest-periods, and any danger of over-fatigue is entirely eliminated.

Until the Cambridgeshire scheme was inaugurated the working man patient had no opportunity of restarting under these or similar conditions. If he dared to graduate his work the resulting financial loss crippled him and his family so severely that in a very short time a great reduction in his food allowance was inevitable. The only other course open to him was to forfeit his independence and become dependent for help upon some charity or similar organisation. When he resumed his occupation, to however small an extent, the contribution he received from his Friendly Society, part of which came from the State and part from the private side of the club, was immediately withdrawn, and, left without any visible means of support, the man was forced to plunge into the turmoil and strife of competition, there to earn, if possible, enough to support himself, his wife, and his family.

We have previously noted that it has been stated on the highest authority that the chances of recovery of a well-to-do

person are three times as great as are those of a working man, the only apparent and essential difference between the conditions under which the two carry on being that the rich man has an opportunity of gradually resuming his employment—employment of a suitable nature—whereas the poor man has to return to unsatisfactory work for unsatisfactorily long hours, *at once.*

Is it not now desirable that some definite arrangement should be made for the continuance of pensions for some time after the patient is, superficially, fit for work? At present a pensioned tuberculous soldier is called periodically before a board convened to revise his pension. He is there questioned as to how long he can work and how much he can do, and according to his answers his pension is continued or curtailed. Here, surely, is a weak strand in the rope of our scheme; no particulars are, as a rule, furnished by the institution in which the patient has been treated or trained as to his working capacity or as to the extent of the progress of the disease as determined by continuous observation of the doctor in charge.

After a necessarily cursory examination the patient's pension may be reduced just at a time when plenty of good food and further encouragement are required to bring the case to a successful issue. If these pensioners are to be induced to work in our farm or training colonies, they must understand that no board will, without consulting the colony physician or the tuberculosis officer in charge of the patient, reduce a pension, and then not too rapidly.

It would certainly be a move in the right direction if, in assessing pensions for cases of tuberculosis, reports and suggestions from sanatoriums or colonies in which the patients reside could, as a matter of routine, be forwarded to the boards before which these patients have to appear, or that consultations should take place between the pensions boards and the medical officer in charge of the area—the tuberculosis officer, who, usually, is the only person capable of giving a complete and satisfactory report on the progress of the case and the working capacity of the patient[1].

[1] Since this was written the suggestion has been adopted by the Ministry of Pensions.

The Cambridgeshire scheme, then, was founded with the object of overcoming this fundamental drawback, and we think that the time has arrived when it may be well to publish the results which have already been obtained and to indicate the lines upon the working of which the desired ends have been attained.

Outline of the Scheme

The After-Care Association is composed mainly of representatives of the various Friendly Societies operating in the county, and is essentially and in every sense of the term, a democratic institution. Each society having its Lodge or Court in every town or village in the administrative county in which the association works, is represented on the association by a certain number of its members. The county is divided for this particular purpose into very definite areas, and each area has a representative in touch with the local conditions, and having personal knowledge of every member of the particular Lodge or Court. The advantage of such a connecting link between insured persons and the association is of inestimable value, as it is clear that without such personal touch and supervision there exists a great danger that a really deserving case may remain without attention and the malingerer escape detection. The arrangement arrived at, however, renders it difficult for the medical adviser in charge of the scheme to be deceived by the applicant for the grant, and, what is even more important, enables a personal local touch to be maintained between the medical officer and his patients.

In this scheme grants are made on the recommendation of the medical officer of the association—the tuberculosis officer. Applications are often countersigned by the general practitioner in charge of the case. There are therefore very efficient safeguards, from a medical point of view, that the applicant is a suitable case for the operation of the after-care scheme, and it is obvious that no undue pressure can be brought to bear upon the two medical men to authorise the expenditure of the funds

of the association, except to the best advantage. Moreover, as explained in the previous paragraph, a very effective check is maintained by the local secretary, who, as a rule, is a working man well versed in local conditions, with a knowledge of the personal needs of the patient and of the desirability or undesirability of assisting the patient in the way to be explained presently. The association works, then, with a central executive committee, with the medical officer as honorary adviser, and through a series of local Lodges. The personal element is thus utilised to its fullest extent, whilst the knowledge available from these various sources is used in advancing the interests of the patient and at the same time in safeguarding those of the association.

The association pays by cheque certain amounts, which may be varied from time to time, according to the needs of the case. The sum expended is, as a rule, equivalent to that which a patient would forfeit under ordinary Approved Society arrangements when he passes off his club and starts his ordinary work. When a man returns from a sanatorium and it is found that he can resume his former occupation as suitable, the employer is communicated with, sometimes by the secretary of the association, or more often by the medical adviser, the graduated work scheme is explained to him and his help is sought. It has been found that when the matter has been fully explained to them the employers in the county are very sympathetic towards the scheme and are willing to help in any way they can. It has been made a matter of principle to accept as little as possible in the way of monetary grants from the employers concerned; this is important, as it is desirable that they may not get an idea that they are acting as philanthropists. The only concession they are asked to make is that the men may be allowed to work for them in the manner and under the conditions laid down by the doctor and presently to be explained. It is made clear that according to his strength the man should work at first, say, only four or six hours a day; and the employer is expected to see that the patient receives the ordinary trade union rate of wages of the district for the number of hours he works. This

arrangement has been found to work very satisfactorily in the area concerned, although some employers have expressed doubt as to whether such an arrangement could become permanent, especially in times when labour is plentiful and when it is not difficult to get as much labour as is required at full-time work. Whatever may be the danger of this difficulty arising in the future, up to the present it has not presented itself.

A Typical Case

Let us take a typical case—that of a farm labourer who has passed through a course of sanatorium treatment.

The man working for a farmer for four hours a day will receive for that four hours the ordinary rate of wages payable for that time in the district. He will thus receive 10*s.* per week from his employer. This will be supplemented by the After-Care Association with 10*s.* per week, the amount of sickness benefit the man forfeits by undertaking to work, and so coming "off the club." It has been found that as a general rule a man is quite willing, nay, anxious, to work the prescribed shorter hours under these conditions, for he feels that he is thus carrying out to the letter the treatment which he would receive at a sanatorium.

The man is, in the meantime, kept under careful observation. It is usually possible for him to present himself for examination at the dispensary at the end of three weeks. A report is furnished by the health visitor as to home conditions; the local secretary is satisfied that the man is endeavouring to carry out instructions, and if his condition is found to be satisfactory the period of work is increased by two hours per diem for the next three weeks. The man now receives a bigger wage, but the "sickness benefit" is kept at the same figure in order that he may be encouraged to continue to earn the larger wage when he knows that his perseverance will not be prejudiced by the premature cutting down of the allowance from the association.

Another examination is made at the end of a specified time, and if things are again found to be satisfactory the man is encouraged to put in full time, the allowance from the association

being maintained as before. This places the patient in an extremely favourable position, coinciding with the period during which, exerting himself to the utmost, he has reached his maximum working capacity, when, too, his food allowance is also at its maximum—the most critical time of the convalescence. The allowance from the association cannot, of course, be permanent, but it is continued for a period varying according to the nature of the case, until it is quite clear that the man has got used to working full time and has become re-accustomed to his former surroundings. Then in a succession of 21-day periods the allowance is reduced by *2s. 6d.*, so that at the end of another nine weeks the man ceases to receive anything from the After-Care Association, and has returned to a position of absolute independence.

It is our experience that on these terms and under these conditions the man readily resumes his former work. He is spared the plunge straight into work-a-day conditions which he would have been compelled to make if the association had not assisted him, and this at the most critical period of his treatment. The way is made easy for him by dividing his ascent to health into practicable stages.

So far, we have described the progress of the most suitable case—the case which can be dealt with easily in this scheme. Of these cases a considerable number have passed through the hands of the association in this particular way; in every case the results have amply justified the energy, time, and money expended on them. Comparing these cases with those allowed to return home without receiving this assistance from the association, there seems to be a marked shortening of the time elapsing between the patient's return home from the sanatorium and his resumption of full work. There is always, we find, great inclination on the part of the patient who has completed his treatment at one of certain sanatoriums to become so wrapped up in himself, and to be so impressed with the gravity of his ailment and with the importance of not exerting himself unduly, that, clinging to his club money, he hesitates to re-enter his former occupation; he almost invariably looks for some further

help, very little persuasion being necessary to induce him to accept some form of charity until, as he puts it, "he gets quite strong."

This attitude can be successfully combated by carrying on the treatment at sanatoriums entirely on industrial lines—that is to say, by marking out the exercise allotted to the man, as far as possible giving it to him at his own trade, and commencing it at the earliest possible opportunity. It appears to us to be a gravely mistaken policy to treat early cases of pulmonary tuberculosis by means of graduated work unless that work is such that the patient recognises his former employment in it or, failing that, sees that it gives a practical result: only then does he realise that under the favourable conditions obtaining at a sanatorium the actual work he does, far from accelerating the progress of his disease, enables him to fight against it—a realisation invaluable for the patient, for having reached it he is willing to return to his home and needs little encouragement to restart his former occupation (provided always that the occupation is one of a suitable nature).

THE WORK OF THE AFTER-CARE ASSOCIATION

The work of the After-Care Association may well be illustrated by concrete cases, though we are well aware that the objection may be urged that insufficient time has elapsed between the patient's discharge from a sanatorium and the point at which the case is reviewed to allow of any very definite conclusion being arrived at that permanent benefit has resulted from this treatment. This line of argument may be entirely valid, and we shall have to wait until a considerably longer time has elapsed before we can state definitely that our procedure has resulted in permanent benefit to the cases concerned. Nevertheless, we are of opinion that we have now sufficient evidence to show that unless the method which is here being advocated had been adopted many of the patients would still be in receipt of a diminishing club allowance and would not have become productive members of the community.

In dealing with such cases two points must be kept constantly in view: (1) The benefits which accrue to the individual patient. These benefits may be a very considerable prolongation of a working life, greater contentment of mind, and other personal considerations. (2) A definite gain to the community in the value of the work performed by the man and the consequent gain to the Friendly Society concerned by the gradual withdrawal of the man from the list of those receiving sickness benefit.

We do not look upon the tuberculosis problem as completely solved on these lines, as is imagined in some quarters, nor is it contended that the Cambridgeshire After-Care Scheme can be put forward as constituting any new specific for the cure of tuberculosis. It has been designed rather with the object of rendering a consumptive working man of economic value to the community, and so of preventing the great drain on the funds of the State and private sides of Friendly Societies working under the National Insurance Act, and at the same time of enabling the patient to be placed in the most favourable position for the arrest of the disease.

During the period under review—three years—52 cases have been assisted on the principles laid down. Out of these 52 cases, all in the first and second stage, only one has died; the others at the time of writing (Nov. 1917) are all engaged in remunerative work. Those who have been assisted during the last few months are naturally not yet on full work, but those who were assisted between two and three years ago are all, with one exception, at full work. Nearly all the cases are those of men following country pursuits, but one or two are clerks in a factory or in an office; others are men who have been assisted to change their occupations for the benefit of themselves and their families. How many will fall out in a year's time or in two years' time it is impossible to say, and for this reason we wish to be quite guarded in making any undue claims for the advantages of this scheme. In one particular, however, it seems quite clear that there has been a considerable gain. In many cases the patients would have hesitated very considerably before

"coming off the club" if there had been no special inducement for them to do so. Once they are "off the club," many hesitate to go on again, especially if they can gradually add to the number of their working hours and slowly accustom or "acclimatise" themselves to the new conditions.

A typical case is that of a worker in a skin yard. When first seen the disease was in its second stage. The man was "on his club," and was apparently content to remain there. He had been "incapacitated" for nine months, and was firmly convinced that he would never be able to work again. His wife went out charing. Having found the man a suitable occupation—driving a light cart for his firm—he was induced to work six hours a day, being given a bonus of 10*s.* a week. Since then, during the past three years, the man has continued to work with but slight and temporary breakdowns. He is still working.

A farm labourer similarly treated, after going through a sanatorium course, is still at full work (harvest work at present). He was only induced to re-start work by the offer of assistance together with the willingness of the employer to take him on for part-time work to start with.

The proof is not conclusive, the data are not sufficient, but the facts point to the conclusion that the scheme is a step in the right direction.

THE PROBLEM OF FINDING SUITABLE WORK

We have already stated, in reviewing the answers of the patients to a set of questions here given, that the crux of the whole matter seems to be the suitability of the work offered, and whether the work offered is really a concrete proposition. In a rural district such as Cambridgeshire, the finding of employment for such patients as are here described offers less difficulty, perhaps, than would be experienced in other parts of the country, especially in areas covered with crowded dwellings, large towns, mining districts, and so on. The difficulty is great even in a rural area; it will undoubtedly be greater in a county

more densely populated, especially where the spread of the knowledge of the disease and of its treatment is defective.

Even in Cambridgeshire, where probably the conditions are simple and the difficulties less acute, the problem of finding work for ex-patients has by no means been solved in its entirety. It is, however, we hope, in process of solution, the first essential having been secured—viz., *a method by which tuberculous labour may be subsidised for the time being;* for such a length of time as will secure the patient a favourable re-start at an occupation eminently suited to his condition. This principle, as has been explained, has been developed by the After-Care Association, and although the practice has been limited, the way of reform is clearly indicated.

In order to test the matter still further, advantage has been taken of the very favourable opportunities which are afforded in connection with the treatment of the tuberculous soldier, and doubtless the Ministry of Pensions had the principle of subsidising tuberculous labour in its mind when the proposals were drafted. The proposals, however, fail in so far that they do not provide the necessary accommodation for instruction in, and the carrying on of, such labour—though once such labour is subsidised it can only be a matter of a few months before the provision of this accommodation will be an accomplished fact. In other words, we shall have established the chief essential for the after-care of the tuberculous soldier—that of providing him with work and subsidising his labour so that he may become a wage-earning member of the community.

Working Capacity of Ex-sanatorium Patients

It is agreed that (according to the stage of the disease) an ex-sanatorium patient can do from 30 to 60 per cent. only of the work done by the normal individual; and since this is an ascertained and undisputed fact it would be foolish to ignore it. That we have ignored it in the past is only too evident, and accounts for the story of failure which has followed most of our after-care efforts. *If a patient is capable of doing only* 60 *per cent. of the work of a normal man it is only courting disaster to attempt*

to place him amidst his old surroundings and without assistance, in competition with the strong full-blooded worker. To send him back to such surroundings with a pint of milk a day would seem humorous if it were not so tragic. It is inadequate, unscientific, senseless.

Hitherto the essential facts of the case have been ignored, so much so, indeed, that a mass of opinion, both medical and lay, is at present on the verge of condemning the principles of sanatorium treatment. The principles are sound enough; it is the method of applying them that is at fault. The essential facts to be grasped, if we are to deal satisfactorily with this problem, is that a consumptive working man cannot equal in working capacity a full-grown healthy man, and that until a specific cure for tuberculosis has been found sanatorium treatment can do no more than retard the disease and, under favourable conditions, arrest it. If, therefore, the retarding process can by some means be indefinitely prolonged whilst the man is doing industrial work our end is gained. Such means in our present state of medical knowledge would seem to constitute the right form of treatment both for the individual concerned and from the point of view of the State.

In densely populated districts and in areas where the housing conditions are bad and the hours long the chances of retardation of the disease in the ex-sanatorium patient are reduced to zero, and it seems to the writers that he will be a bold man indeed who attempts to carry on after-care in such surroundings. Just as the State recognises that it must be responsible for the treatment and training of ex-soldiers who have been incapacitated by the war, so the State ought to shoulder the responsibility in the case of those civilians who fall by the way, succumbing to tuberculosis. The stress of modern life, inadequate housing, and severe competition are responsible for the break-down of such men, and it seems that since the State has already shouldered so much responsibility it should go a step farther and make sure that the opportunity be given to these men to do the work of which they are capable, though it be but a percentage of a full day's work.

THE BOURN COLONY

This thought, together with others, made the writers attempt in a small way to estimate the amount of work of which sanatorium patients are capable, and to ascertain whether under suitable conditions various forms of labour could not be carried out without the elaboration of sanatorium surroundings ; hence the foundation of the Bourn Colony, where it has been a matter not for surprise only but for congratulation to learn what can be accomplished with a minimum expenditure of money—though not of time and energy.

The Bourn Colony was founded by one of us (P. C. V.-J.) in 1915. The "colony" consisted at that time of an old country house standing in its own ground of two acres. It had long been empty, the garden was unrecognisable, and other parts of the ground resembled a wilderness. On this site a few shelters were erected and the patients (early cases some with and some without tubercle bacilli in the sputum) installed. In the house resided a matron (a trained nurse) and a nurse, together with a cook.

The number of shelters was gradually increased and the work of planning out the colony was begun. Paths had to be made and the land drained ; a large pond in the middle of the grounds had also to be drained and filled in. To accomplish this a trench 6 feet deep and 40 yards long was dug by the patients. As soon as this necessary work had been done our attention was turned to the further fitting up of the colony for the reception of more patients. Since each patient lives in a shelter, the matter was easy of solution, and it was only necessary to erect more shelters to make the place available for the reception of the larger number of patients. We were, however, without a trained carpenter, but one or two of our patients being rather more skilled with their hands than the others volunteered to design and make a shelter which would serve as a pattern.

Our colony at that time resembled somewhat closely the island on which the "Admirable Crichton" of the play landed after the shipwreck. In such a community one patient will always take the lead, and if it is fortunate enough to have the

right type of man the work will go on. This, at any rate, was what happened at the Bourn Colony in its early days. We were fortunate enough, also, to have a discharged soldier who had been a market gardener, and in a very short time, as he was able to enlist the sympathies of some of the patients, the garden grew apace.

The beginning of the colony well illustrates the principles on which it is run. Patients are encouraged to follow an occupation as near as possible to that on which they were formerly engaged, with the result that the colony has developed on simple lines with the aid merely of the patients themselves. After some time a carpenter patient arrived, and, helped and guided by his skill and experience, shelters have been re-designed and made at a greatly accelerated pace; now practically half the shelters in the colony are of home construction, and the patients, seeing the efforts of their labours amply rewarded by the installation of another patient who has benefited by open-air treatment in a hut made by themselves, are encouraged to push on with other shelters. As we have been able to extend the scheme on the recently acquired Papworth Hall estate, a still greater number of patients can be accommodated, and the work at Bourn is growing, the construction of shelters which will be worthy of the newer institution going on rapidly.

Practically all the patients now at Bourn are discharged soldiers; on admission they all had tubercle bacilli in their sputa, but, with the work as planned, they are steadily improving, and—a very important matter—are taking a keen interest in their surroundings, a great factor in adding to the efficiency of the work and the benefit obtained.

The original capital laid out in the acquisition of the house and the rent of the grounds, in the building of a small sanitary block, in the purchase of extra bedsteads and bedding for the new shelters, in replacements, etc., was the moderate sum of £500, and up to date this has enabled 88 patients to be treated on the above lines. After two years' work 90 per cent. of the patients discharged from the colony are still at full work, and we think it can be claimed that the treatment is not only

economical but that the results are in no way inferior to those obtained in sanatoriums that have been enormously more costly to build and much more expensive to equip and administer.

The colony being, of course, used as a training ground in connection with the After-Care Association, a number of patients have been admitted who have had preliminary treatment in other sanatoriums. Those who have returned to the county and have not been able to work have been taken in at the colony and there encouraged to make a new start on some suitable occupation. The latest addition to the activities of the colony is the tailor's workshop, which, again, has been erected by the patients themselves. The occupant, an ex-army man, who is a tailor by trade, is engaged part of his time in gardening work and part in tailoring in a workshop specially designed for him.

COMBINED SYSTEM OF INDUSTRIAL COLONY AND AFTER-CARE

We have now no doubt that the experience gained at Bourn Colony, together with the experience of certain sanatoriums which have made a feature of the introduction of trades into the sanatorium régime, will be of enormous value in indicating the way to the reorganisation of sanatorium treatment. Such experience affords promise that we have only to abandon the short sanatorium treatment and work on the lines of a prolonged stay at the less expensive and more moderately staffed industrial sanatorium, run entirely on colony lines, to obtain the results which we have been led to expect and can now confidently anticipate.

Many local authorities at the present time hesitate to put up expensive buildings for the treatment of tuberculosis on what we might already describe as "old lines." Let them be encouraged to work on the colony principle and follow their cases up by means of an after-care association.

It is the intention, in Cambridgeshire, to proceed still further along the above slightly sketched lines, and by means of a

subsidy paid by the State through the Pensions Ministry or through Friendly Societies (the principle as will be seen is the same), to encourage the formation of a Garden City with organised industries in connection with a central institution. Part of the Papworth Hall estate, which has recently been acquired for the working of the scheme, is being satisfactorily adapted; model workshops where the consumptives will in time be employed are being fitted up, and the model village which already exists will, we hope, also be acquired to accommodate them. It is anticipated that the maximum results will be obtained by sanatorium treatment, and that the breakdown which under present-time conditions so frequently occurs when the working man is discharged from the sanatorium may thus be prevented.

Summary of Advantages of System

To sum up, the following advantages of the combined "colony" or industrial sanatorium and after-care system as here outlined may, with considerable confidence, be anticipated.

1. Prolongation of the period of treatment with—(*a*) more intensive, because more interesting and better graduated, treatment; (*b*) the utilisation of suitable occupations in such treatment even during the earlier stages of residence in the colony; (*c*) the continuation of training and the consolidation of the improvement already gained during the preliminary stages of treatment; (*d*) more personal supervision and immediate encouragement.

2. The utilisation to the greatest advantage of the funds drawn from (*a*) the National Insurance Commissioners; (*b*) the rates; (*c*) the Pensions Ministry; (*d*) Approved Societies; (*e*) voluntary subscribers.

3. The pooling of the advice and countenance of these various authorities, bodies, and individuals.

4. The preparation and encouragement of the patient to re-enter, under more favourable conditions, on the struggle for a livelihood without having to contend against the drawbacks attending overwork, overstrain, and anxiety.

5. The moral encouragement afforded to the patient by the knowledge that these favourable conditions, already tried and successful in the case of others, are available in his own special case.

6. The gain to the community of a productive member in place of a useless consumer. It may be objected that this member is producing but 50 per cent. or 60 per cent. of his full or original amount, but to this it may be answered that this 50 per cent. or 60 per cent. may represent considerably more than the full capacity of many a healthy worker.

7. The segregation and isolation of "centres" of massive infection and the bringing down to a comparatively safe dilution, of a less—but still under certain conditions—dangerous quantity.

8. The education of patients in the "ritual" necessary for their own "nutrition," maintenance in, or restoration to, health and strength, and especially the knowledge of how to render themselves harmless to themselves, their families, and their friends.

9. The inculcation of a feeling of moral and physical self-respect involved in,

10. The knowledge that they are being cared for, not out of charity, but because their fellows—the State or community—recognise that they, members of this community, have fallen by the way, not as a result of their own misdoings, but because surroundings were unfavourable and conditions adverse, and that these righted they still have a chance of making a success of their life and work.

CHAPTER II

THE "MIDDLE CASE"

THE use of the word "cured" not being justified in connection with any form of treatment yet brought to bear on tuberculosis, the term "arrest of the disease" has been substituted, though even this elastic expression has usually been superseded by still more guarded and tentative expressions.

The Cause of Relapse

The arrest of the disease is said to take place only under certain ill-defined conditions. In the first place, treatment must be prolonged. That this may produce the desired result is quite in accord with pathological evidence. Moreover, from clinical evidence—from the general improvement in the condition of the patient, where we have the classical signs associated with want of activity of the disease in the lung, increase of weight and a normal range of temperature—it may be argued that if the treatment can be continued for a further period and improvement maintained, eventual arrest of the disease may be brought about.

In the case of the working man, no figures and no facts in support of this thesis can be adduced. Deductions from the experience gained in the treatment of the well-to-do are obviously open to many sources of error, for it has been demonstrated that well-to-do people who return to their former unsuitable, unmodified mode of life are in no way less liable to relapse than are their less fortunate brethren. The patients who do well are those in whom the disease is diagnosed early, who have the sense and opportunity to carry out in their own homes a modified form of sanatorium treatment—a well-regulated life without excesses of any kind, in which the economic struggle

is tempered to their conditions. Well-to-do patients who, either through their own fault or through stress of circumstances, have to resume a strenuous existence amid surroundings not hygienically favourable are no less likely to relapse than is the working man. We have certainly no definite or reliable statistics to the contrary. Under these conditions, "once a consumptive, always a consumptive."

Sir Arthur Pearson lately said to his blind pupils: "The first thing you have to do is to learn to be blind." So, too, the consumptive must "learn to be a consumptive," so to readjust his life that the ravages of the disease may make slower progress; to avoid the things that lessen resistance; and, above all, to guard against excessive fatigue, worry, and mental strain. In other words, to live a sanatorium life. With our present knowledge we are, indeed, compelled to assume that except under the most favourable conditions complete arrest is out of the question except in a very small proportion of cases, and that the thing to be aimed at is a retardation of the disease such that a reasonable amount of work and exercise may be indulged in without exciting a recrudescence of those symptoms and conditions which oblige the patient to cease work.

The question thus resolves itself into—"Under what mode of life is the greatest retardation of the disease effected, for we know that no prolongation of the period of sanatorium treatment will so arrest the disease that a permanent cure is effected if the patient is allowed to return to undesirable surroundings, or if in good home surroundings he resumes his old ways and habits in workshop and in office?" Dr N. D. Bardswell's Midhurst figures give us information on this point. That all the Midhurst patients return to undesirable surroundings cannot be believed. Most of them were in that grade of society which lives in well-built, well-ventilated houses in the better-planned suburbs of our large towns and cities. Many worked in offices which, though perhaps not ideal, would not be condemned as wanting in light, air, or general sanitary amenity, and yet Dr Bardswell's figures appear to demonstrate that the

results obtained by the treatment of middle-class patients at Midhurst were very little better than those obtained amongst working-class patients at Frimley. What is the cause of this universal (or almost universal) breakdown or relapse?

The Essential Factors

As a temporary expedient sanatorium treatment gives excellent results. By itself, as a means of permanently restoring the patient to health, it has proved to be a failure. It is a good thing in itself, but not by itself. Something more is needed, and that something is what is now known as "After-care," designed to assist the patient in the continual struggle for fresh air, rest, and good food, the shoal on which the consumptive is shipwrecked, a struggle which accounts for the recrudescence of the disease and for the weakening of the protective forces essential for the final victory over infection. The less the economic struggle the slower the advance of the "arrested" disease remaining after a short course of sanatorium treatment. Bad surroundings are but a result of the economic struggle; without the struggle bad housing might be eliminated. Both must be swept away if the vicious circle is to be broken.

We see the results of the economic pressure, but cannot realise the fundamental principles on which any adequate system of after-care should be based. Build better houses by all means, but do not imagine that by building better houses, the sources of infection still remaining, much headway will be made in lessening the amount of disease. A worthy squire in one of the eastern counties was so impressed with the importance of good housing as a factor in the struggle against tuberculosis that he erected a series of model cottages in his village. He is now pained and surprised to find that there is as much (if not more) tuberculosis in those cottages as in any part of the county. One or two advanced cases were allowed to remain, with the inevitable result that the disease has spread; but then wages are no higher than elsewhere, and work, worry, and anxiety are as dominant as in other parts of the country. The

struggle goes on, *massive* infection remaining ever ready to attack the depressed and claim fresh victims.

Two factors, then, are essential for the transmission of the disease from one member of the community to another. The one is complex, subtle, a force rather than a visible entity, but the results of that force are manifest every day—bad housing, insanitary dwellings, want of rest, want of food, anxiety, all already referred to, are the results of economic pressure, or, if we prefer the term, the struggle for existence. The other factor is material; we can see it, handle it, know it in a vague sort of way, test its properties—the tubercle bacillus, by which massive infection has been demonstrated. Build up resistance, and even massive infection may not prevail; lower the resistance, and less massive infection will suffice to set up the disease.

What means do we take to build up this resistance? We supply the ordinary dispensary patient with a little "cod-liver oil three times a day." A pious wish is expressed that the patient's windows will be kept open and "take all the fresh air you can and don't over-exert yourself." In a more progressive community preventive measures assume the form of the building of a few model cottages, which, however, are quickly filled with a mass of struggling humanity. The struggle to make ends meet, pay rent, and try to "carry on" continues—and the tuberculous cases are still allowed to remain—ignorance as to the preparation of meals, lack of time for rest and recreation, worry, anxiety are scarcely lessened. We have not raised the resistance even in a small degree.

The mere formation of an after-care committee will not afford any solution to a problem which must be attacked simultaneously from all sides by well-directed efforts, every one of which is to be welcomed, not only in respect to tuberculosis, but because the resistance of the race against all disease should be raised. Clear away slums, build garden cities, do all these things by all means, but at the same time make sure that other measures are adopted.

The Control of Massive Infection

We must, above all, deal with one of the main sources of trouble, the "carrier of massive infection," for pathology teaches us, and with no uncertain voice, that though small doses of tuberculous virus *may* be harmless, large doses *must* be guarded against.

All are agreed that without infection by the tubercle bacillus there can be no tuberculosis. The usual argument that infection takes place in childhood and need not be taken into account in later life cannot, to-day, be discussed without impatience. Were there no specific bacillary infection, lowered resistance in adolescence would not induce tuberculosis, whatever other disease might manage to obtain a foothold. That we cannot in every case demonstrate the source of infection is no evidence that such infection may be overlooked or disregarded. Men and women are now going about their homes suffering from a disease which, either unwittingly or otherwise, is labelled "bronchitis." Soldiers are granted recurrent sick leave on account of "bronchitis," and 12 months later are found to be expectorating numbers of tubercle bacilli and *eventually are sent to a sanatorium for three months' treatment.* What an absurdity! The infective material is being expectorated in massive doses, but no means to prevent pulmonary infection are taken. We *could* keep the disease under control. Why have we not controlled it? Instead of going to the root of the trouble we have preferred to put on a patch here and a patch there, until we are obliged to condemn our own methods and are now seeking an excuse to "save our face." With regard to ex-soldiers, at any rate, we now make no pretence that we select "early cases" for sanatorium treatment, though we are assured that unless cases are selected "early" the results will be eminently unsatisfactory; nor are we making the slightest effort to prevent the spread of infection, to deal adequately with which we must first determine the stage at which the consumptive is most infectious.

To the outer world, at any rate, the *bed-ridden* consumptive

in charge of a village nurse is not, when proper precautions are taken, a danger to the community. The real source of danger is the man who, just able to work, feels well on some days and rather bad on others; who struggles on with his work, often for long hours; who frequents crowded places, such as tramcars, 'buses, and eating-houses, and comes into contact with children and young people; is careless in habits and manners, coughs a good deal and carelessly, and is said to be suffering from "bronchitis"; the "early case" returned from the sanatorium, or an out-patient at one of our great hospitals. Our sanatoriums are not available for these cases; nor are the few homes for the dying willing to receive them—they are probably such a long way from death—and they will not go to the poor-house infirmary.

The Function of the Dispensary

Most of the consumptives now with us are "advanced cases." They flock to our new dispensaries, and the extensive statistics compiled from the records of the visits of these poor unfortunates are accepted as evidence of splendid things achieved. The higher the figures the more proud are we of the results of our labours; indeed, the efficiency of the tuberculosis officer is judged by the number of clients attending his dispensary—"unfortunates," "out of works," the unemployable—a burden to the insurance committees, a trouble to councils and guardians. It is the proud boast of some dispensaries that the number of patients "seen" in a morning amounts to a grand total of 200. Are these 200 there to be cured by means of tuberculin, or cod liver oil, or cough mixtures? Are they instructed as to the mode of life they should lead? If so, the instruction must be delivered at a very brisk rate, and with scanty respect to detail as to how it is to be put into practice. Many of these patients are sources of infection, but little or no adequate attempt is made to protect the community from the danger to which they are exposed from their presence.

Instead of taking pride that we see 200 in a morning, should

it not rather be counted to the dispensary doctor for righteousness that, examining but few patients, he deals with them thoroughly, and then in the interests of the community asks that he may give the unfortunate consumptive an opportunity to live a reasonable life, to do his 50 per cent. or 30 per cent. of work under conditions in which the danger of infecting others is absent or reduced to a minimum.

Sir Robert Phillip's well-thought-out scheme is being distorted and turned to very wrong uses. The dispensary—perhaps an unfortunate term under the circumstances—was designed as a centre of activities in a well-thought-out scheme, but the very keystone of the situation is often turned into a mere adjunct—an out-patient department with none of the special advantages of a large hospital. Here the "material" cannot be used for teaching purposes, for obviously few dispensaries can be attached to medical schools, though were these dispensaries "run" properly they might, in large towns at any rate, become centres at which post-graduate courses of lectures and demonstrations could be given to the medical practitioners of the neighbourhood.

The Problem of the Chronic Case

In the meantime how are we to deal adequately with the mass of infection left untouched by our present dispensary or sanatorium organisation? Most of the patients who spread infection are those for whom there seems to be no niche into which they can be fitted. "Chronic case," says the physician, and as a "chronic case" it is dismissed. But it is this chronic case which, day by day, obtrudes itself upon our notice. It is this type of patient who steadily descends the social ladder, pulling his family down with him. Did this affect the patient himself, merely, the matter would not be so urgent. The whole family, however, may be brought to the verge of poverty—to abject misery—this quite apart from the risk of infection to which reference has been made—and the problem comes to be of importance from the social point of view. An acute illness

of short duration, followed by the death of the bread-winner of the family, is borne comparatively easily. It is the long-drawn-out illness of that bread-winner, with increasing poverty extending over many years, that brings such havoc in its train.

At present we place a premium on infection, in so far as many of our benevolent after-care societies aim merely at the provision of sufficient help to keep the patient out of the workhouse infirmary. Far better that such help should cease and the man be taken into the infirmary and cared for and the infection circumscribed; better still that he be given the opportunity to recover some of his powers of resistance, receiving a sufficiency of food, living in the open, and, under supervision, working part of the day; for with the risk of infection effectually controlled at the source he is no longer a danger centre, especially if the family, also placed in favourable surroundings, have their resistance strengthened and their minds set at rest by the assurance of remunerative employment.

Is it a practical proposition, then, to give to a large number of consumptives the opportunity to carry on their usual or other avocation under conditions carefully controlled by a medical man? It is said that the problem is too vast, the expenditure too great, the immediate prospect of success too visionary. Is this the case?

The Tuberculous Ex-soldier

It is certainly useless to spend money on treatment which neither cures the patients nor prevents infection of others, but we are justified in doing the best we can for tuberculous soldiers discharged from the Army if there is any prospect of prolonging their lives and protecting their families. Health, even life, has been sacrificed by these men, though the glory of sacrifice is wanting. Theirs is not the distinction of dying facing the foe, of being wounded in battle, of losing an eye or a limb, of receiving a visible mark of conflict. Nevertheless, our sympathy and help can never repay the sacrifice made by the man who is wounded no less surely, and no less severely, though by

an invisible foe—the man struck down by, and hopelessly invalided through, consumption, often, as we now know from wide experience, neglected and allowed to die a lingering death, through an agony prolonged perhaps for years. There is no lack either of sympathy or of money; neither is it for want of appreciation that the man is neglected—rather is it want of courage, lack of initiative, of imagination, that what at first sight appears to be a hopeless problem is allowed to drift on from month to month, from year to year.

It is argued that consumption is incurable, but surely in certain cases it can be arrested, and the physician is most emphatic that for this the best remedy is prolonged sanatorium treatment, which, however prolonged, must be followed up by "after-care"—a phrase as elastic as it is vague.

Why, then, is sanatorium treatment not prolonged if by its means the "arrest" may be made more certain, if lack of accommodation can be no answer nor lack of funds? It is a problem of "human nature." Few ex-soldiers can, under existing conditions, be expected to consent to a prolonged course of sanatorium treatment. Has it ever occurred to us to ask the reason for this? Which among us would be content to do useless labour all the year round? As one intelligent patient remarked: "We waste time; we wish to learn something; we have nothing to occupy our minds; we want to improve ourselves; you say that we cannot go back to our original trades, yet you do not attempt to provide us with a substitute; we cannot dig, to beg we are ashamed. If we cannot exert our bodies, can we educate our minds?" "Yes," it may be said, "but this was an exceptional patient! Are you going to educate your farm labourer, your van driver, your crossing-sweeper?" Yes. Our object is so to educate the man that he may realise that an intelligent application of what he is taught of his own trade will enable him to carry it on under favourable conditions and surroundings, and it must be our business to see that these surroundings are forthcoming.

To hold that we are at the moment unable to call into existence these circumstances is to beg the question. If it is a

question of money, we spend £7,000,000 a day on destruction; a fraction of that sum, properly expended, would soon call the required conditions into existence.

Most of our ex-soldiers are intelligent, keen-brained workers. Two distinguished visitors who came to inspect the colony remarked that the patients seemed to be an extremely intelligent set of men, and that there could surely be no difficulty in teaching them a new trade. They were astonished to learn that the patients in question were a window-cleaner, a lodging-house cook, a common sailor, a theatrical scene-shifter, a jobbing tailor, and a plough-boy (this plough-boy showed such aptitude at carpentry that he is now, after six months' training at the colony, earning his living with a firm of carpenters in a large country village).

The patients, given no opportunity to show their intelligence, cannot be blamed if they evince no initiative or desire to start a new trade. If anyone of us were told suddenly—having spent any capital we may have possessed—to start on a new and unaccustomed line of work, should we not have a sleepless night or two? And presumably we have been trained somewhat more thoroughly than has the window-cleaner or the lodging-house cook.

How frequently we blame the working man when we should blame ourselves for want of imagination and lack of sympathy and foresight! We prescribe a treatment which without our help, often withdrawn at the critical moment, it is impossible for the patient to carry out.

Are we, then, to extend the treatment and our help for "a lifetime"? As far as our present knowledge goes we say, and say unhesitatingly, Yes!—not only for the patient's sake, but still more for the sake of those with whom he comes in contact.

Prevention is better than cure, but if the two can be combined we are placed in a position to solve a very difficult problem and to do a really great work. Can the two questions be so linked that one set of machinery may be made to "control" both?

The Provision of Useful Employment

Directors of sanatoriums find that ex-soldier patients discharge themselves even before the end of the regulation three months. Are there any reasons for this beyond those mentioned above? There are, and they are usually well founded.

1. The temperament of certain patients is such that they cannot accommodate themselves to institutional life. Such patients are not numerous, but are found in all institutions, and obviously it often becomes a question of the suitability or unsuitability of the patient for the particular type of institution in which he is placed.

2. Patients sometimes discharge themselves because of domestic or home difficulties. This is generally looked upon by the medical superintendent as an excuse rather than a reason, often before investigation is made into the real state of affairs of the man concerned. Can we expect a man who feels fairly well and able to do a certain amount of useful work to grind away for months at monotonous tasks, especially when he knows that his family is on the verge of starvation, or, at any rate, is in worse circumstances than if he were at home and could resume work at his own trade.

Here is the obvious remedy. Let the patient, instructed in a trade which if not his own is closely allied to it, realise that whilst undergoing his treatment he is being trained for a better berth, a more highly remunerative job.

It is the "waste of time" that the patient imagines is going on during his stay at the sanatorium to which he so strongly objects. For the ex-soldier the question of income is of little account, for his family allowances are good and in many cases are equal to his pre-war earnings. Still, without stimulus to the brain, with his muscular energy going to "seed" doing monotonous or useless work, a condition of mental discontent, easy to understand but difficult to overcome, seizes the patient, who "does his time" and longs for home.

Experience gained at the Bourn Colony and at Papworth Hall goes far to show that the mental attitude of the patient is materially improved if he be set to some useful occupation, the nearer to his own trade the better, whilst it is found that with time and care, which assuredly are never wasted, there is no insuperable difficulty in grading any kind of work as may be desired.

What objection is there to a cabinet-maker following his own trade at a sanatorium? Difficulty in supervision? This, in the experience of the colony, amounts to nil. Not sufficient exercise? What, after all, are we attempting? Certainly not to turn a cabinet-maker into a navvy. Quarrying, indeed, is exercise, but it is not essential to the restoration of our cabinet-maker to health. Ours, fortunately, should not be a difficult task; it is to convince the cabinet-maker that he can follow his own trade in the environment of the colony. Make those conditions as favourable but as simple as possible, so that when your patient returns home he may "carry on" under the same conditions. Demonstrate to him that cabinet-making need not be carried on in a superheated atmosphere—that, at any rate, we have proved; also that lens-mounting and testing in the making of scientific instruments may be carried out without a dark room! The ingenuity of the patients under treatment, properly directed, has already been responsible for the invention and construction of devices and apparatus which enable these men to carry on their occupations under good hygienic conditions.

The combination of sanatorium treatment (perhaps the term "colony treatment" is to be preferred) and industrial work is surely a step in the right direction. We have admitted that there is no "cure" for tuberculosis, and that the best results obtainable are a return to work and a prolongation of life, which may be very extended. If we can bring about the arrest of the disease whilst the patient is carrying on his own trade, have we not solved, partially at any rate, the problem which we set out to solve? Is it necessary that our cabinet-maker should return to an unhealthy workshop to struggle

against a bad environment and work at a pressure which will mean a further breakdown. Having determined the conditions under which a cabinet-maker should live and work (we are now dealing with the ex-soldier enjoying a pension), those conditions may be ensured on the colony estate, with the inestimable advantage that his pension will be continued so long as he continues in residence and does part-time work, for which he receives a fair wage, doing work accurately graded to his strength—no more and no less—and surrounded by a social atmosphere in which he feels that he is a useful and satisfactory member of the community; the State in the meanwhile having the positive assurance that the bacilli which are coughed up by our patient as he goes about are rendered harmless and that the man is thus no longer a danger to his fellows.

The Colony at Papworth

"The scheme sounds all very well in theory, but have you put it into practice?" Yes; on the colony estate at Papworth, at the present time, are families whose bread-winners are consumptives, with tubercle bacilli in their sputum, men who by means of the State subsidy—a pension—are carrying on their original trade under ideal conditions—happy, contented, and earning their own livings. A concrete proposition has been placed before these men, and they have not hesitated to grasp it and avail themselves of what is its best feature—the shielding of the patient from the keen competition of the outside world.

"All this deals with a mere drop in the ocean! What practical result will be obtained?" Surely, it indicates a means of humane segregation—not making men inmates of an institution merely, but free men in a free English village. What can be done in one district should be possible in others. Progress may be slow at the outset, but once started on right lines may we not expect the momentum to increase?

To what can the success of the experiment be attributed

(for that it has been a success we are now convinced)? To several factors, but undoubtedly the chief of these is the payment of the soldier's pension, a State subsidy.

At no previous time has such an opportunity of subsidising carefully controlled and graduated labour—a control at once complete, humane and sympathetic, presented itself. The elimination of all harshness or scrimping is essential; the patient must be kept well away from the poverty line. A pension continued even for a number of years is a small price to pay for the doing away with infection even of a single individual, but against this cost must be placed the return in life and work, which is ample. But not only are the immediate members of the man's family protected, but his fellow workmen, his old acquaintances at the public-house, his fellow travellers in train, tramcar, and 'bus—all benefit from the removal of this single source of infection. And what of the patient himself? He enjoys a four- or a six-hour working day; his leisure hours are spent in a garden, his own, planted with his own hands, with which also the fruits of his labour are gathered in; he enjoys the entertainments given at the colony from time to time, and with a library placed at his disposal and by the stimulus of popular and entertaining lectures, his mind is kept active and employed.

A Hopeful Outlook

What patient with these advantages would, if matters were explained to him, return to a crowded street, struggle on, working ten hours a day, gradually break down and be consigned to the tender mercies of the relieving officer? The social life of the colony, though touched upon incidentally only, is a vital part of the scheme, and must on no account be neglected. A patient used to town life cannot be expected to leave all its attractions and banish himself to the country unless he may look forward to some compensating advantages. Make an attractive proposition to him, and offer him a life worth living, and the community will receive—in value commensurate

with the degree of infection removed—a full return for its outlay.

We are aware that we are limning a bright and pleasing picture, and it may be objected that the number of patients already dealt with is so small that such a picture is overdrawn, and further that it is impossible to generalise from so few special cases; but we may remind our readers that the idea of even one patient subjecting himself to the colony treatment has often been scouted, but the one came, and if one, we argued, why not two, if two why not more, and we were not wrong. Difficulties there were and will be—that of removing objections was admittedly great, but now with the experience gained there appears to be no reason why all or many should not be persuaded to come. As a matter of fact the applications for houses on the estate are at the moment much more numerous than are the houses at the disposal of the committee.

It often happens, when it is first suggested to a resident patient that it would be well for him to bring his family on to the estate and work there, that he will not listen to the proposition, or that he makes demands and conditions it is impossible to meet. He tries to work at home but breaks down. Then it is that he is willing to bring his family with him and return to conditions which he finds were sound and under which he had a few months previously regained so large a measure of health and strength. He has learned his lesson in the hard school of experience; our advice is recalled and conviction is followed by action. The man is ready to make a sacrifice and we are ready to render that sacrifice as slight as possible. We place before him a concrete proposition ensuring work under favourable conditions for a number of years, this number now depending upon the funds available for the purchase of land and for the building of houses, and usually our terms are accepted.

We now know that there will be no lack of applicants for the houses on the estate. The non-infectious and the more able-bodied are not expected to remain longer in the colony than is necessary for the establishing of their health and working

capacity. The chronic cases with numbers of bacilli in the sputum, patients who have no friends but who have a 50 per cent. working capacity when working under ideal conditions—we shall continue to welcome. They are the despair of the general practitioner and of the physician to the out-patient department, but there is no difficulty after gathering them in, in helping them. Their labour cannot be fully remunerative, it is not expected to "pay," but with their "subsidy" there will be no great loss, in the long run certainly no greater loss to the State than there is under present conditions. Any deficit is the price the State must pay for the elimination of centres of infection, without which all the benefits of our building schemes will be neutralised and our good intentions brought to naught. By all means house the working man properly—that is a far-sighted policy; but keep the new houses free from infection.

Outline of the Scheme

It may be objected that a co-operative system such as that now suggested is far removed from the activities of an institution. This may be true, but the scheme of the colony is essentially more comprehensive than that of the sanatorium. On the one hand, it reaches out towards an intelligent after-care movement, and on the other it is wide enough to provide hospital accommodation for a patient resident in a cottage who has a serious breakdown—and even under the most favourable conditions this is inevitable—for the hospital after all is the centre of the activities of the community as far as the restoration to health of its inhabitants is concerned, though the colony scheme embraces all the essentials of the ideal system which it is the aim of "after-care" committees to establish.

It comprises hygienic housing conditions, abundant light and air, an efficient nursing staff available from the central institution—a staff known and trusted, friends rather than officials; a garden, the ideal exercise ground, combining that privacy and feeling of ownership so dear to the heart of an Englishman; and workshops, the property of the colony, where

the work is strictly regulated according to the patient's health and strength. In some cases the work is done "at home" in a room or building especially adapted for the purpose, where the patient may learn to live the life that is best suited to his special condition. The income earned by the patient at his trade is, with the pension earned whilst he was a soldier, sufficient for his needs, but the necessary incentive to do more and better work is never wanting, for although the amount of the pension remains the same the wage earned depends on the skill and assiduity of the patient and the number of hours during which he can train himself to work.

It has been hinted that the colony is admirably suited to the development of slackers—that it is an idlers' paradise. A consumptive patient with numerous tubercle bacilli in the sputum can never be set down as a slacker. He is definitely diseased. There can be no question of malingering. The proof of the presence of the disease can be demonstrated. The oft-repeated mistake of accusing the consumptive of slackness is a sure road to disaster. With all the good will in the world he is unable to do a full day's work. It must not be expected of him. Once the presence of the bacillus is ascertained and the diagnosis established the greatest caution must be exercised in dealing with so-called slackness, for be it remembered that the consumptive is a strange psychological phenomenon, and that, as a rule, he is ready to do more work than is good for him rather than too little. This is not the experience of all officers of sanatoriums, but we believe that the explanation is that the work given him to do is monotonous and irksome, and often not well adapted to the man's temperament. Assuming that the man is working at his own trade or one nearly allied to it, that he is earning some money by it and is looking forward to earning more, it is our experience—now not a negligible quantity—that the patient, far from slacking, takes pride in showing how well he can do his work. The more advanced the disease—of course within well-defined limits—the more anxious is he to "carry on." The exceptions, few in number, have to be dealt with specially.

The Colony a Complete Scheme

As yet it is scarcely realised that the colony, hospital and settlement constitute a complete scheme designed to deal with tuberculous cases of all kinds. Here is no picking or choosing of the type of case to be treated. Some critics object that the work is not strictly limited to the so-called early cases, whilst others, especially corporate bodies, appear to think that the colony should be filled with cases practically hopeless from the beginning, and with these only.

We have given our reasons for following a line laid down at a very early stage of our work, and we are convinced that any departure from this line would interfere most seriously with the working of the scheme as a whole. If, on the one hand, any but curable cases are refused admittance, the most dangerous and pitiful cases are left at large to infect others but to suffer alone; whilst if nothing but advanced cases are admitted the colony at once becomes a hospital—nursing staff, hospital accommodation, expenses all increasing out of proportion to the good effected—and the colony, instead of taking its place in a well-rounded scheme, becomes a hospital for incurables, a home for the hopeless, and a place to be avoided by the hopeful, with the great moral elements of hope and encouragement essential to success in the treatment of all tuberculous patients completely eliminated.

CHAPTER III

PRINCIPLES FOR DEALING WITH THE "MIDDLE CASE"

THE incidence of the new problem involved in the treatment of the discharged tuberculous soldier and sailor has so shaken our old beliefs and jarred our prejudices that we are in danger of attempting to grasp at an idea which we imagine may help us in the solution of this problem, but of failing to evaluate the idea in that its fundamental principles are not

understood. From the number of inquiries received, and from conversations with many, both lay and medical, who have visited Papworth Colony—interested in the problem of the treatment of tuberculosis—it has been brought home to us that even amongst those who have given, or are giving, attention to the matter there is a welter of diverse opinion which must be rescued from chaos and carefully arranged and classified before any concerted action can be taken on it.

Chances of Success in Change of Employment

The simple and oft-repeated formula, "Seek a job in the open air," glibly offered to the middle-aged mechanic, and the equally casual advice "to take things easy for the next three months or so," given to a man with a wife and six children to support, indicate only too clearly that little mental effort can have been brought to bear on the actualities of the situation. If there is one thing that experience of colony work has made clear it is that, as a rule, it is futile, and will now be criminal to give the above advice, unless it is realised that if there is any one form of occupation more unsuitable than another for the consumptive it is a job as an unskilled farm labourer.

The job in the open air—the utopian dream of the unthinking adviser—may be either Scylla, Charybdis, or both, but it usually threatens the consumptive with destruction. The idyllic summer holiday at a farm, with its peace and rest, its plain but nourishing milk and eggs, its new and temporary interests, and its gentle exercises in the open air, is something very different from the strenuous and exacting life of a farm labourer, even at an enhanced wage of 40*s.* a week. The unskilled hand, the untrained eye and the inexperienced brain are of little value to the farmer, and certainly cannot be profitably employed. Though many members of the medical profession, and the vast army of voluntary workers, who so frequently give the above advice do not realise its futility, consumptives are fully alive to it. It is only necessary to talk to these men and to obtain their confidence to have it brought home to us that they know better than their advisers that to set an

unskilled man to work at any skilled trade is not only economically unsound, but physically detrimental and morally and socially delusive. To bring the matter home to ourselves we have merely to imagine how sorry would be the plight in which most of us would find ourselves were it necessary for us to give up our profession and seek pastures new. Why, then, give advice—fortunately rarely followed, or if followed quickly given up—which nine times out of ten can only be a source of disappointment to those concerned? The question:—How many men can be trained in agriculture in the course of six months? can only be put by a town-bred man with no knowledge of country life, and as it is impossible, in six months, to train a healthy man to follow a complicated industry such as agriculture, how much less is this possible in the case of a "50 per cent. man" suffering from tuberculosis. Had the colony committee the changing of a man's occupation from that of an artisan or clerk to that of a farm labourer or even a smallholder as its objective, it would inevitably court failure. A genuine case of pulmonary tuberculosis with a definite and progressive lung lesion will undoubtedly benefit by a prolonged stay under ideal colony conditions, but after it all very few will ever be able to stand alone, and, working from morning till night, live on the produce of a small holding. The arrest of the disease in these cases is so imperfect and the condition so unstable that the proposition cannot be a paying one, and this instability is, from the medical point of view and apart from economical and psychological factors, the main cause of failure, and must necessarily remain so until some method of stabilising the arrest is attained. One of the difficulties met with in dealing with such a vast problem as that of tuberculosis is that now and again exceptional results which do not appear to bear out general experience crop up. As a rule, however, if these exceptional results are carefully analysed, it will be found that the principles on which the colony treatment is based are sound and have not been violated, and that other special factors have come into play to alter the course of events. In some cases change of employ-

ment has undoubtedly been attended with success, but these successes are few and far between, and have, as a rule, been associated with a group of such favourable contributory conditions that the truth of the general proposition is in no way countered. For example, a sympathetic employer may, by altering, fundamentally, the patient's whole economic condition, be an important factor in the determination of an apparently exceptional success. He permits, nay ensures, the working of shorter hours, later morning rising, more prolonged noonday rest, with ample time for meals, and one of the prime factors in success—the feeling of the absence of competition is assured. The feeling "I shall not get the sack even if I slack a little when I feel weary" affords great psychological comfort. It must be remembered, however, that such philanthropy does not flourish freely in the largest concerns and in limited liability companies; but the colony, having learned much from the sympathetic employer, may now take his place, and strive to provide for all cases of tuberculosis not only the above conditions, but, in addition, suitable dwellings, good food, and protection from the economic struggle—the salvation of the consumptive working man. The exceptions proving the rule, therefore, instead of militating against the general proposition, are of the greatest service as indicating the proper method of tackling the general problem. It is not so much the change of occupation that ensures the favourable reaction, nor, certainly, is it the mere fact that the patient becomes a farm labourer; for there is no magic in that occupation. Nor, again, as we have already insisted, is a light open-air job a panacea for the disease. Patients working at either, or both, unless properly watched and guided, become steadily worse and inevitably head for disaster. We must realise the actual economic conditions that are assured when a sympathetic employer has the case in hand, and also that these are necessary for the sake of the undertaking. These fundamentals, these economic conditions assured, we are afraid to disturb them in any way, and the problem seems to us so vast that we are almost afraid to do or say anything that might lead to such disturbance.

Reason for Labour's Lack of Sympathy

Has it ever struck us how extraordinarily unsympathetic the mass of labour—"the labour world"—is toward all schemes of sanatoriums and the like, and, if so, has it ever occurred to us to seek the reason for this? It is obviously the same reason that underlies the apathetic attitude of labour to the Government's training schemes for disabled sailors and soldiers, which are little more than camouflage, the mere tinkering with a huge problem. What should we, as medical men, say if, owing to a shortage of doctors, it was seriously proposed to give to men a six months', or even a twelve months' intensive course of medicine and surgery in the large hospitals, and then turn the recruits loose to practise medicine and surgery on the community? It may be argued that this is not an exact parallel, but it is sufficiently exact if we leave out of account the question of danger to the public and consider only the amount of knowledge and skill which the man could acquire from such a course. For the training of an efficient workman the present course as recommended and provided is absurd, and the working man knows it. That the skilled artisan does not wish his trade to be exploited by an untrained person is another aspect of the question, but one of equal importance. If we are simply patching up a patient in order that he may return to his original surroundings, where he may infect other working men, small wonder that the plan of utilising the sympathetic employer receives but scant consideration from the working man, who is thus called upon to run the risk not only of infection but also of diminished earnings due to the business being burdened by the introduction of the invalid.

The insufficiency of the training that can usually be given to a man disabled, whether by loss of a limb or a lung, is very fully appreciated by the intelligent working man; not so fully by those called upon to advise, treat, and train him. The medical profession does not fully appreciate that there can be no other criterion of a patient's "cure" or of the arrest

of his disease than that of earning capacity, more or less permanent. It is obviously of vital importance that the earning capacity of a consumptive should be restored to as nearly a normal level as possible. To alter a man's occupation, when the earning capacity of such a man is the standard of success, is no easy matter. Here earnings are of prime importance, and a moment's thought will make it clear that in the majority of cases of pulmonary tuberculosis—those with well-developed disease—it is impossible for the earning power of the patient to be more than 50 per cent. of his normal—for him to be more than a "50 per cent. man." That some become 75 per cent. men is an encouraging fact, but we recognise that it is only under very special conditions such a percentage-earning capacity is attained.

Consumptive's Hopeless Handicap in the Open Labour Market

If it be accepted that a "middle case" of consumption is unable to work for more than six hours per day at a trade which is not too laborious and not too technical, and is paid at a full trade-union rate of wages for those six hours, it is obvious that the man cannot earn during those restricted hours of work a sufficient sum to keep himself and his family in decent circumstances. In the ordinary work-a-day world an employer cannot be expected to take into his shops or factory a consumptive with a working capacity of only 50 per cent. and pay him above the trade-union rate of wages. There would soon be a general upheaval in that factory or shop, and a state of unrest such as we have witnessed arising out of the payment of the exorbitant rate of wages to munition workers. Our hypothetical employer would have to be a philanthropist indeed who could or would consent, or dare, to adopt such a course. It is clear, therefore, that even if we could find a sufficient number of sympathetic employers who would guarantee a full wage for a 50 per cent. worker our difficulties would still not be at an end. A further subsidy is required, a

subsidy that must come from the Government or State, it being impossible to throw such a burden on the industrial employer of labour. As a rule, an employer asked to employ a consumptive in his factory or office answers that he would prefer to give a donation or subscription to some charitable institution, hospital, or sanatorium, and have done with the matter. The disorganisation which would arise out of the employment of a consumptive on the only adequate basis, that of the maintenance of health of a patient and his family, is sufficient to undermine the whole scheme. Occasionally an employer willing to run the risk may be and is found, but the arrangement entered into does not, as a rule, last long. The danger of infection from the presence of a tuberculous worker is hinted at by some timid soul, and the word is rapidly passed through the shop. Moreover, if concessions as to hours, etc., are made to an apparently healthy man (the wound in the lung is not visible) it is with difficulty that the other workers are prevented from expecting and demanding similar concessions. The difficulties and obstructions set up by trade-unions are equally great, in many cases debarring the consumptive from finding suitable employment. The embargo of the union is decisive unless the patient is a skilled workman, who in many trades *must* have served his full apprenticeship. This indeed is the fatal bar to the training of a consumptive in any new skilled trade. A few months spent in specially fitted-up shops at a colony is quite inadequate to obtain his admission into any skilled trade (in which wages are high, and, for the most part, adequate) and the corresponding trade-union, even should he have the ability to perform the work at the end of a limited period of training. From all points of view, then, the difficulty of training a consumptive in a *new* trade, to be carried on and competing in the open market, is enormous, and there appear to remain to the consumptive but the inadequately paid casual occupation, where the work is heavy and the remuneration poor, both factors to be avoided if success is to be expected or attained.

Return of the Consumptive to His Own Trade

The myth of a "light job in the country" being exploded, the training of a consumptive in a light remunerative calling no longer lies within the domain of practical politics. There remain but two alternatives: (1) the consumptive must return to his own trade, or (2) he must become a permanent colonist. The former is the one usually adopted for the consumptive; it is at present the only course open to him, though in the majority of cases it must end in disaster. The economic conditions of competitive labour are against the man, and are fatal to success. The philanthropic employers who are willing to eliminate these fatal competitive conditions are few and far between, but to their sympathy and action we owe the cases which appear to provide exceptions to the rule; apparent exceptions only, which, however, serve as examples of methods that, if followed on a large scale, spell general success.

The nature of this method, call it after-care or give it any name which may indicate its nature, has as yet been but inadequately appreciated. The problem has almost invariably been viewed from the "individual cure" point of view, one small factor after another being insisted upon. The new idea, which is the outcome of the colony as advocated at Papworth, is admirably expressed by Dr H. A. Pattison in his study, *The Agricultural and Industrial Community for Arrested Cases of Tuberculosis and their Families*, published by the Federal Board for Vocational Education, Washington, 1919. "Industrial communities," he says, "have developed rapidly in the country. Many of them have grown about a single industry for the sake of that industry, such as a steel mill, coal or mineral mine, etc. The converse proposition is the one I wish to offer, the development of industries around a community for the sake of that community." The same idea has been expressed as follows: "Let communities be started in which our consumptive soldier can live in his own home, shielded from the fierce competition of the outside world, a self-respecting worker, an economic asset. Let employment

be found, the model factory erected, the hours of toil properly regulated, a fair wage paid[1]."

In other words, the rôle of the colony is that of the philanthropic but unfettered employer, with his factory open for the admission of those who cannot find work elsewhere, and where the mode of life—if a serious relapse is to be avoided —must be carefully regulated. That the disease will progress there can be little doubt, but the rate of its advance may be so controlled that the patient may yet enjoy many years of useful work and pleasant recreation, instead of having to engage in a brief struggle against overwhelming odds, the while seeing his family dragged down through poverty to want. In the model village the conditions are such that the wife and child are protected from all massive infection, and in time the latter will be free to compete in the world at large, unhandicapped by intervening years of want, malnutrition, and consequent lowered resistance. There may be little hope of altering at a stroke of the pen imperfect economic conditions in the world at large, but we now have ample evidence in support of our contention that small communities may be, and have been, inaugurated, where the conditions of existence may in time be such that they will constitute a model for the outside work-a-day world. Such communities realise the dream of all social workers, and embody the aim and end sought by the consumptive workers of the world, the priceless privilege of living in surroundings that will compensate for their segregation, while helping to protect the larger general communities against dangerous sources of infection.

Essential Features of Industries for Consumptives

The features essential for the industries specially run for consumptives are many and complex, but the idea that such industries can be only those carried on in the open air must, as a practical proposition, be abandoned, and this for one reason among others, that enormous tracts of land would be required

[1] Varrier-Jones, "A Plea for the Consumptive Soldier," *Reveille*, No. 2, 1918.

on which to carry them out. On an acre of ground, unless very highly and intensively cultivated, few people can be employed. An ordinary farm of 200 acres would afford employment for a number of hands infinitesimal as compared with the number of cases awaiting admission. It is, therefore, of primary importance that industries, capable of absorbing a greater number of workers per acre of ground than can be taken upon a farm, should be started. It is accepted that it is impossible to train a man in a new trade in the short space of time that under present conditions can be allotted to this process; it is obviously inadvisable, therefore, to select an occupation in which elaborate training is required; but from the munition works we have acquired experience which should enable us to deal with great success with the training and employment of the consumptive. Strenuous and prolonged physical manual labour must be avoided at all costs and this is now possible in that the use of modern machinery enables us to do away with severe manual toil. It is now no longer necessary to set consumptives to work at carpentry, say, with a plane and a saw, and instruct them in the performance of labour which in all modern businesses is done by machinery. (Little wonder that on the old methods our goods could not compete in the open market.)

In a well-ventilated workshop with good aspect, fitted with modern machinery, the hours of toil regulated to a nicety by a sympathetic management, it is possible for consumptives to earn a reasonable rate of wages. That the wage earned is insufficient to maintain the man and his family goes without saying, for, as already pointed out, a full trade-union rate of wages for the short hours worked cannot but be insufficient to provide for the standard of comfort essential for the well-being of the patient. We are dealing with the 50 per cent. capacity man, and no speeding-up machinery brought into play can do other than leave the percentage unaltered, but it does *relieve the patient of much too strenuous exertion.* The State must come to the rescue, and for its protection against infection must contribute a subsidy equivalent to some percentage of the

patient's earning capacity. When once an industrial colony has been started and it becomes possible to employ numbers of subsidised patients at various trades, an encouraging vista of employment will be opened up to our consumptives. All we have to do is to determine and provide the necessary conditions, making rules and regulations whereby the most suitable working hours may be ensured and excessive toil eliminated. Given these conditions, the labour of the consumptive may be made so remunerative that, while some subsidy will be necessary, it will not be large and will certainly be well applied, especially when the advantages to the general community are taken into consideration. The recognition and application of these elementary principles of colony treatment to all workers amongst the tuberculous, indicate a distinct advance along lines hitherto but little explored. Organisation is needed in order that these principles may be further, fully and logically applied in the near future. We must have organisation of the home life; there must also be a co-ordinated attack upon the disease, its effects and its causes, primary and predisposing; a full appreciation of the factors in the spread of the disease; and a realisation of the fact that all measures to be successful must be well-directed, continuous, and prolonged. Sir Arthur Newsholme, in his foreword to Dr Chapman's report on colonies, evinces an exact appreciation of the position, except that he does not refer to the control of infection outside the home. "The greater part of the consumptive's life is spent at home, often under unsatisfactory conditions both for the patient and his family, and the supervision of his home life by the tuberculosis officer and the health visitor, even when this is frequent and sympathetic, does not completely meet his needs. If the patient is to have the best possible prospect of recovery, and if his family are to be safeguarded against infection, in many cases he will need (*a*) improved housing; (*b*) occupation adapted to his physical capacity, etc.; (*c*) the family income will need to be supplemented. These requirements for many patients have not hitherto been met."

Some System of Segregation Required

They have not been met, and for the reasons given in the earlier part of this chapter they are not likely to be fully met until some system of segregation is thought out and organised. The problem of occupation under private employers working for profit is not likely to be solved; it is impracticable; moreover, it may be prejudicial to the health of the other workers to have subsidised consumptives working alongside the non-tuberculous. With the provision of separate workshops and separate dwellings, the difficulties, though not by any means removed, are minimised. Indeed, our thoughts directed into this channel, the colony idea acquires an entirely new significance. Formerly it meant the advocacy of open-air occupation, and the provision of those special conditions that were available for the wealthy few only; it is not until we get the public to view the matter from an entirely different angle that the full significance of the new colony idea becomes evident. From the fresh standpoint, facts which seem to have no place in our system assume a new importance, and fit in with the general scheme, helping to bind it into a concrete whole.

No scheme for the control of the tuberculous can be regarded as satisfactory which does not embrace the whole life of the consumptive patient. But what scheme can control the whole life of a consumptive in our crowded cities, and where can an organisation be found to throw its tentacles into every yard and alley?

In the past we have gained a knowledge of the facts, but we have failed to view them from the right angle. Turn the picture round; let us get rid of preconceived notions, and build on the firm rock of experience and tried methods. Then, and then only, will progress be made and success attained.

CHAPTER IV

THE COLONY AND ITS PROBLEMS

IT is out of the question to pass in review all the possible solutions of the tuberculosis problem, the future of which covers a field so vast, a world so full of promise, so crowded with difficulties, so surrounded by fears and prejudices, that the subject can be skimmed over merely with the lightest possible touch, but an attempt must be made to deal with a part of the problem only, a part at the present perhaps assuming undue proportions and importance, but a stone which if built into the building we are all striving to erect, may assist in strengthening the structure and help to make the work of others easier and its completion somewhat nearer of attainment.

It has been stated that the work about to be described was "a little corner," and it must be confessed that residing in a little corner we are apt to be unduly absorbed in the study of the contents of that corner, and perhaps to overlook the larger world outside. Be that as it may, the corner method teaches us the reality of things, brings us into very close contact with vital principles and renders a superficial view of the situation, and, therefore, a superficial judgment, less probable. A broad view of the whole of our problem is essential, but it must be recognised that no solution can be found by taking a broad view and that alone, for it must never be forgotten that, primarily, the problem is one of the individual. We are not dealing with a flock of sheep or a herd of cattle. We are dealing with a mass of humanity, but a mass made up of definite entities, each unit resembling the other in many characteristics, but each differing from the other in a thousand ways. While it is true that one consumptive resembles another in the extent of the lesion in the lung, it is equally true that wide differences of temperament, character, social position, not to mention varying degrees of resistance to the disease, exist and have

always to be taken into consideration. We often hear, and indeed are almost sick of hearing, that 60,000 persons die annually from tuberculosis, the problem being presented to us as one of mathematics to be solved as an arithmetical problem. We hear that such and such a figure represents the total incidence of the disease, and that so many beds in so many institutions must be provided to combat the scourge and there the matter ends, or rather begins, for we immediately reduce the figures to £ s. d. and say that so many beds will cost so many pounds and, low be it spoken, we feel proud of our wonderful powers of calculation. It is true, of course, that the problem has its financial side, and a very important side this is, but it cannot be insisted too strongly that the question at issue is of greater complexity than is involved in this financial side, and unless this is recognised all our calculation is work in vain. All of us are aware of the extent of the problem.

We recognise the economic loss to the community through "tuberculosis disability," and we all appreciate the fact that there is one, and but one, solution to this problem. The question is, how is that solution to be arrived at; in other words, how can we prevent the spread of infection without which there can be no further extension of the disease? It is, unfortunately, necessary at this stage to clear the ground somewhat, for there still exists at the back of the minds of some a doubt as to the infectiousness of the disease with which we are dealing. We, no doubt, are firm believers in the infectivity of tuberculosis—that it is contagious, that the spread of human tuberculosis (i.e., infection with the human bacillus)[1] is by direct, or in some cases indirect means from one human being to the other. We give this hypothesis our lip service; we should consider it a slight on our common sense were we told that we did not believe it; we have gone so far nowadays as to be impatient of a repetition of the statement, yet if we examine the matter closely and in all its bearings, we realise

[1] According to Cobbett the bovine bacillus is responsible for a very small proportion of pulmonary tuberculosis, probably not more than one per cent.

that it has our lip service only. Our actions do not correspond with our words. We have certainly honoured the statement, but in the breach rather than in the observance. How often do we hear that the chief rôle of sanatoriums is that of education, that the patients who are discharged after a short stay have been instructed in the way of life and know how to live a life perfect in hygiene and adapted for the prolongation of working-days. But what opportunity have they to put precept into practice? Are not veritable sources of infection every day sent broadcast over the land? What steps are taken to prevent the spread of infection when we allow these unfortunates to wander at will? No doubt we keep the spark of life alight by small doles of money or food, we find underpaid jobs for them, we allow them to be exploited in the labour market and we give all these endeavours the high sounding name "After-care." What a cheese-paring policy it is—this doling out of small sums of money and food without very accurate supervision as to how it is spent and how far it will be of real help. We all know how rapidly a consumptive who has had treatment at a sanatorium descends the social scale. Employment becomes less remunerative and less secure, until only the most casual labour is open to him.

The interval between treatment in an institution and the case becoming "advanced" is often very considerable—we have accurate data as to the length of time occupied in this gradual descent—and it is throughout this time that nothing, absolutely nothing adequate, is done to prevent infection. We have truly given lip service only, for our actions do not conform to our faith.

Of course, it will be said that our important service of health visitors and sanitary officials who are daily making strenuous efforts to prevent the spread of infection and with much labour are paying daily visits to the homes of the people and instructing them in the way they should go have been forgotten. No, but these officials are engaged on a superhuman task; the patients' lives are so different, their circumstances so varied and so changeable that it is impossible to secure an amount

of supervision that can have any appreciable effect upon the spread of infection. Quite recently a letter was received from a tuberculosis officer pointing out the desirability of dispensary supervision and improvement in medical treatment following the visitation of patients in their own homes. On making inquiries as to how many of the patients were at work no definite answer could be obtained, but so far as could be gathered many were working, but under conditions which were not stated. The number of cases was very considerable, more and more were continually pouring in but no evidence was adduced that the prevention of infection was the primary object aimed at, simply the treatment of the individual; again our profession of faith did not stand the test of action.

A health visitor with all the goodwill in the world cannot be in more than one place at once even in the Lord Dundreary sense. The middle case, coughing often—whether at work or in the home or in places of amusement—is an ever present source of danger and, unless sufficiently isolated, must be a centre from which dissemination of the disease takes place. The treatment—a term as elastic as it is vague, for in its true sense it can have no meaning when it refers to a consumptive patient in bad surroundings—is of no avail in preventing the spread of infection. We know that treatment of a consumptive, to be of any influence in arresting the disease—not merely in the alleviation of symptoms—must be carried out under very special conditions. The temporary improvement, the mere transient betterment of his general condition, is but a phase, a passing phase, of the journey along the gradual downward path he follows. There is no satisfaction in such a fleeting momentary improvement, either from the patient's point of view or that of the general community. He is no more able to work; the least strain aggravates his morbid condition; and he soon becomes quite unsuited to the environment in which he finds himself. Our treatment, in other words, has not materially benefited the individual but it has cost the community much in money, work, thought and anxiety and has sown or allowed of the sowing of the seeds of more care, worry, anxiety and expense

for succeeding generations. If it were our object to perpetuate the disease, there could surely be no more certain method than the one we now adopt. We have either adopted a faith blindly, or we do not accept a faith we profess. To say that it is difficult to convert our faith into works, is to beg the question. That it is difficult should not make us shut our eyes and go gaily on in the opposite direction.

Our half-hearted action may of course arise from lack of conviction that the disease is infectious; what is the evidence?

Newsholme remarks that "having investigated nearly 1,600 voluntarily notified cases of phthisis, as well as a much larger number of fatal cases of phthisis, from a public health standpoint, I do not conceive it to be possible that any physician having done similar work could fail to realize to the full extent the infectivity of this disease, when exposure to infection is protracted, and the dosage of infection is great, a state of matters which is the domestic lot of most of the working classes when tubercular infection attacks a member of the household. The evidence convincing one of this does not lend itself to statistical statement, and when stated in print it may not be convincing; but the steady succession of cases in infected households at intervals of one or two years, or longer, the intercurrent destruction of children by tubercular meningitis or 'broncho-pneumonia' while their parents are suffering from chronic phthisis, and other similar evidence, can leave no doubts in the minds of those who come into continuous contact with the actual facts" (*Trans. Epidemiol. Soc.* xxv. p. 70).

Again, it may be the knowledge that the task to which we have put our hand is almost impossible of completion. In other words we accept it as impossible to control the sources of infection, believing that these sources are so numerous and unknown, that no method of segregation could be devised to include not all, but even an effective proportion of them. Is it a fact, for example, that just as there are carriers of the germ of diphtheria, so there are carriers of the tubercle bacillus, who go through life without any symptoms which might at any

time attract attention, and yet are the means of handing on the disease to several, nay, many persons?

The point may be illustrated by a concrete example. A Cambridge undergraduate, a fine athletic man, developed what was diagnosed as an attack of influenza. Its course was prolonged and there was cough with expectoration. The sputum was repeatedly examined with negative results. The patient "recovered" completely. Some months afterwards he suddenly coughed up a mass of sputum and being of a curious turn of mind brought it to the pathological laboratory with a request that it should be examined. Under the microscope the specimen was seen to be an almost pure culture of tubercle bacilli, so numerous were the rod-shaped organisms. The patient was apparently in robust health. It may be argued that such a case would be very difficult to discern, very difficult to isolate and it may well be that, amongst the well-to-do, those who live under the best conditions, the disease is spread by such an individual as the one just described. That insanitary houses, want of food, lack of the necessaries of life are not the only predisposing causes of tuberculosis seems clear, for tuberculosis takes its toll from the rich as well as from the poor, from the athletic as well as from the poorly developed.

This leads, naturally, to another point. It is often argued that tuberculosis is the great means adopted by nature to weed out the unfit. Such a statement is grossly inaccurate, it has done incalculable harm in that it has prevented our legislators and the public at large from seeking and adopting right methods of dealing with the problem. As long as the mass of public opinion is influenced by such an argument, so long will there be an insuperable barrier in the way of any efforts at reform. When it is argued in cold blood that it is against public policy to encourage the existence of the tuberculous, that such persons must invariably be "weeds," and therefore unfit to exist, it is useless to try and persuade the mass of mankind to adopt measures for the prevention of infection or the proper treatment of the unfortunate individual. Tuberculosis never has been and never will be the means of improving the race—no disease has ever

conduced to such an end, and no disease ever will. It is the victim of tuberculosis, when that disease has worked its will, and not until then, who is an "unfit." He has been made unfit by the disease, he was not unfit before he was attacked.

Recently, making a careful examination of the histories of all the patients admitted to the Colony, it was a matter for surprise to find how high was the percentage of men who had led an athletic life before they were attacked by the disease. Many belonged to local football or cricket clubs, others were men who excelled in other forms of athletics—were strong swimmers and fleet of foot. It was almost the exception to find a patient who had not been good at some form of exercise, many being conspicuous for the skill they had once displayed either on the football field or in some other strenuous pursuit.

Those looking back at the friends of their own undergraduate days will be struck by the numbers of them who have contracted tuberculosis, and died from it;—men whose physique was universally admired and whose prowess in athletics was specially commented upon. A similar investigation in other institutions for the tuberculous would bring out the fact that it is not the "weeds" who are specially attacked by the disease—at any rate not those whose physique is not up to the standard of the Recruiting Medical Boards. Again, amongst soldiers discharged from the Army suffering from pulmonary tuberculosis, it is the exception to find that those who are admitted for treatment are those who were placed by the Recruiting Medical Boards in Grade III. That the meshes of the sieve were large enough in the early days of recruiting cannot be denied and that many men who obviously had tuberculosis were passed as fit, but after the first rush was over, and when adequate arrangements had been made for the examination of men by the tuberculosis officer, the number of cases of pulmonary tuberculosis passed into the Army was small. Upon investigation it is clear that many of the men who are now invalided out of the Army on account of tuberculosis are those whose physique was particularly good and whose general condition gave no easy or obvious clue to the presence

of a lesion of a tuberculous nature in the lung. Would it not be well that this investigation should be prosecuted in other localities? Were this done there can be little doubt that the Cambridgeshire results would be confirmed.

From a physical point of view there does not appear to be any ground for the suggestion often advanced that those who contract tuberculosis are necessarily weeds—that the weeds are *also* attacked "goes without saying,"—but it does afford evidence that the disease is no respecter of persons, that it exercises no selective principle and that weak and strong alike fall a prey to its ravages. If it be our object to perpetuate a race of physically strong individuals; if that be the great aim of selection, then it is useless to encourage a disease which is non-selective, i.e., attacks the well-developed muscular man as it does the weak, nay even in greater proportion.

If on the other hand it be our aim to produce a race of intellectuals, whose mental capacity may overshadow the lack of development of mere muscular strength, we are equally perverse in singling out tuberculosis as the agent with which to attain this desirable end. We know that those who have an exceptionally well-developed brain, those endowed with mental capacity far above the average, fall a prey to the disease in no fewer numbers than do those not so endowed. We have merely to call to mind such names as John Addington Symonds, John Richard Green, Shelley, Keats, Chopin, Mozart, Robert Louis Stevenson, Washington Irving, Jane Austen, Emily Brontë, amongst a host of others to convince ourselves that if the brainless ones are often attacked by the tubercle bacillus, those to whom genius has been attributed are attacked in equal, if not in greater, proportion. Look at the question how we will, we are forced to the conclusion that the tubercle bacillus is no respecter of persons, the strong and the weak alike are attacked; there is no question of any special susceptibility of the feeble and the weeding out of such in order that the race may be improved. This error so widely promulgated has done incalculable harm. It has encouraged the pragmatical in high places to meet the proposal for the

prevention and treatment of the disease by the argument that no good can come by prolonging the existence of the weak and that to root out the disease is to deprive nature of her best means of improving the race. This argument must be met and countered with the sternest determination. It is absolutely without foundation and is pervaded by no single ray of truth. Once the ground is cleared and it is recognised (1) that tuberculosis is an infectious disease, and that we must act up to the faith which is in us, and (2) that there is no evidence that the disease selects as its victims only the nation's weeds and thus improves the race; then the method of attack becomes clear.

The crux of the whole question is the problem of the middle case. First, the spread of infection must be limited, and in order to effect this it is necessary that our energies should be concentrated not so completely on the symptoms of the diseased, those who have well-defined symptoms and signs, in whom the lung tissue has broken down and by whom the bacilli are freely expectorated, in futile attempts to "cure"; rather must we devise and press forward a comprehensive scheme whereby the individual for whom we are arranging to care shall be placed in a position in which he may have the advantages of treatment in order that the disease may be arrested, whilst, at the same time, he shall be rendered inert as an infective centre to the community, which is thus afforded protection against further ravages. When we, as a community, realise that the segregation of consumptives during treatment can be made a practical proposition, we shall have advanced a long way towards the elimination of infection. The question of the detection and treatment of early cases of tuberculosis involves other and very important issues, but until our medical schools are reformed and the early signs (we refer to the true early signs, not those now commonly accepted as such) recognised and passed on to those who in the future will be engaged in general practice, are we not beating the wind and losing valuable time? The advice to treat early cases is excellent, but until the accumulated mass of medical knowledge is sufficient to ensure early diagnosis little progress along these lines can be made, though all efforts to

attain it should be encouraged, not, however, as is frequently urged, as the only means of bringing about the millennium.

The greatest difficulty met with in carrying out after-care of "middle" cases is the provision of suitable employment and occupation for them. We have tried and we continue to try to fit square pegs into round holes; the misfit is oftentimes quite ludicrous. For exceptionally carefully selected "early" cases, such an after-care scheme as that worked in Cambridgeshire, undoubtedly meets with unqualified success. But the moment we tackle the "middle case" on these lines lack of success attends our efforts. We are indeed attempting to grow orchids in entirely unsuitable conditions and environment. The keen wind of competition quickly shrivels up the leaves and stunts their growth. It is obvious from the very nature of the case that we cannot succeed. Any frequently recurring breakdown, any lack of sustained energy, any want of power and physical force must unfit the worker to "carry on" under the ordinary work-a-day conditions in which the normal person works. No one realises this more fully than does the consumptive. Why, then, does he try to exist under such conditions? Simply because there are no others under which, at present, he can exist. No practical proposition has been placed before him. Institutions which employ consumptive labour, always pick the best cases and even then maintain that such cases are but broken reeds. Very few, if any, sanatoriums deliberately select middle cases and offer them jobs. Yet these are the very cases which are in greater need of assistance than any others. Even sanatoriums which, it is to be assumed, are institutions run on business lines, cannot afford to employ these people, for they can never earn a living wage. To maintain them in moderate health, the equivalent of a living wage they must have, although they cannot be employed when a profit and loss sheet has to be drawn up and balanced. We cannot expect them to be a paying proposition.

It has always been maintained at the colony that the labour of a middle case of consumption must be subsidised and that many of our failures in the past have been due to the fact that,

consciously or unconsciously, we have always taken the consumptive at his face value. We have been too much influenced by appearances and feel that he ought to do more work than can really be expected of him. We have only to glance at a group of consumptives to feel almost convinced unless we are "on guard" that they are a group of slackers. They appear so fit. Yet on applying the stethoscope our opinion is—or ought to be—instantly modified. Patients suffering from epilepsy are utterly incapable of earning a living under present economic conditions; a consumptive with moderate disease is in exactly the same position. We must bring our mind to realise this. When we have also educated the consumptive to realise this, we shall soon recognise that both from the point of view of the individual and from that of the community, *we must call into existence a set of conditions suitable to the patient's needs.* Such conditions are to be found in a colony. We must realise, difficult though that may be, that the medicine of yesterday has been satisfied with the treatment of symptoms, with the relief of individual suffering. Our hospitals have been filled with advanced cases of heart disease, kidney disease, and other fibrotic processes, and we have been content to describe such conditions and to treat them. The question of prevention has scarcely been considered; even now are we not always trying to close the stable door after the horse has been stolen? In tuberculosis, at any rate, is it not time we started at the right end, to give up trying to heal symptoms, to catch up in a losing race?

A sanatorium should not be a separate entity, a watertight compartment in which early cases only are received and treated —the early cases—cases without any sign of a breakdown of lung tissue which can be treated with the excellent results of which we all have experience. Sanatoriums should be set apart for the arrest of definite symptoms and hold *their place in colonies* as rest houses or fever houses, while the colony as a whole should be designed for the reception and segregation of such cases where they may exist, work, and live comfortably, without being sources of infection to the general community. We have already used sanatoriums for early cases and now in

some quarters it is proposed to start colonies where a further strict selection shall take place and the best of early cases be treated for a further period. Excellent for the individual no doubt but what a small contribution it is to the solution of the main problem. Surely with the lack of adequate results from sanatorium treatment before us, we are not going to extend and perpetuate the system, keeping the current in one confined channel, one narrow groove.

Colonies to be successful in meeting present needs must be much more comprehensive than hitherto, they must include the sanatorium or rest house, they must extend the activities of sanatoriums both downwards and upwards, receiving advanced cases that will not consent to enter a home for the dying but will grasp at the last straw of hope such as can be held out at a sanatorium, and on the other hand offering opportunity for healthful work and healthful surroundings to those who while less unfortunate still cannot compete in the open market with the fit man.

Early cases receiving treatment and training may, with the added inducement of remunerative work, be kept under prolonged treatment and fitted to return to their world with the disease arrested. But the various parts of the system must be linked together into a concrete whole. The usual conception of a colony is a place to which tuberculous cases may be sent to work for no wage or for little more than pocket money, but where there is no room for cases that present any physical signs of disease. It seems to be accepted that as soon as the latter cases are admitted the whole colony must be upset since it cannot cater for those who require a few days' rest in bed. Indeed so limited becomes the field of selection, due to the rigid medical examination, that few cases can be submitted to this special building-up process, and when to this is added the enormous difficulty of persuading a man to undergo training while a wife and family subsist on the bare necessaries at home, we see that this conception being accepted the scheme must be of very limited scope, more limited even than that of the sanatorium. When further we consider that no practical man can be misled by the

myth that he can be trained as a practical farmer or smallholder in the space of a few months, and that even twelve months is not sufficient, we begin to appreciate the reason that so few men will consent to undergo the ordeal. We know and they know that a poorly trained man stands no possible chance of earning a living wage in the open labour market, and a poorly trained consumptive even less, and it is obviously far better for such an early case (we refer to the tubercle bacillus-free patient, devoid of physical signs—the usual candidates for such a colony) to be so financed by an after-care association on the Cambridge principle that he may continue to work at his own or some allied trade.

As yet he is not a danger to the community; when he does become dangerous, if under dispensary supervision he can be persuaded to enter an institution. When we come to deal with cases of the next category the story is a very different one. The man has active disease, albeit somewhat retarded by treatment at a sanatorium. He is refused admission to such a colony as that described; he cannot without serious danger return to his original trade, he cannot be suitably helped from outside by an after-care association, as his relapse is certain and because of the extreme difficulty of finding suitable employment for him. These are the cases which unfortunately are now assisted with small doles of money and food and an underpaid job. The patient is kept continually on the edge of a precipice, the assistance he receives being just enough, but only just enough, to keep him out of the workhouse infirmary. Better far that such assistance should cease and the patient become an inmate of an institution. To this he will not consent, for he can still do a little work and he feels that as yet he is probably far from death. The patient receives but palliative treatment and the community no real protection against infection. The pity of it is that we do not realise that under favourable and well-defined conditions the patient is capable of doing work of real value. He can still work at his own pace, though unfortunately, as his own pace is far slower than that of his competitors in the work-a-day world, he soon finds himself in a

backwater. Such a case should indeed excite our sympathy. We may see such a one six days out of seven, a man who cannot find his place in the world, and who left to his own devices disseminates the disease amongst his family, his neighbours and his fellow-members of the community. His full working capacity is over, the treatment of his case will never add glory to our sanatorium returns. His frail body excites the sympathy of the onlooker, no doubt, but he is the consumptive for whom no helping hand is forthcoming, the man who without that helping hand must fall from plane to plane of the descending social scale. He is the central factor in the problem of tuberculosis, a far more important factor than the advanced case—the bedridden case, where, although the danger of direct and concentrated infection is greater, it is so circumscribed that it is limited to a small family circle.

The attack must in future be directed against this middle case; an attack bristling with difficulties, but offering great possibilities for good. The numbers of these middle cases are so enormous, our preconceived ideas of treatment so limited, our outlook so restricted, our conceptions of the capacity for work of these unfortunates so imperfect and even erroneous, that it is difficult to decide how to plan an attack at once humane and sympathetic, practical and effective. One thing is certain, our old methods are "sadly to seek." "A short stay in an institution" is played out. The improvement resulting from a carefully regulated life but followed by relapse on return to unsatisfactory home conditions, throws into strong relief the inefficiency of the system. The short period of education available has been found to be useless, for the patient cannot follow our advice or put our precepts into practice.

In the past we have been content to limit our endeavours to the favourable case, and to leave untouched—untouched as far as effective treatment and the prevention of infection are concerned—the middle case. The reason for this is not far to seek; we have been blinded by the transitory results of sanatorium treatment, and have shut our eyes to the wreckage which such treatment has left in its track. Very naturally we

have no liking for disappointing results. The individual case, which, instead of improving goes steadily downhill, is, it must be confessed, a disheartening proposition if we focus our attention on the treatment of the individual. It is obvious, however, that our attention should not be so focused, but that we should survey the whole field in order that we may make up our minds that it is necessary in the name of humanity and to protect ourselves, to care for these cases. Once we view the problem from this standpoint, and grasp the essential fact that the disease is spread by the middle case, we cannot escape the logical conclusion that such cases demand our care and attention, and at once. Admitting all this, the fear still possesses us that so gigantic a problem requires almost superhuman effort for its solution. Sir Arthur Newsholme holds that by the admission of advanced cases from amongst the poorer classes into the wards of certain infirmaries, the spread of the disease has to a certain extent been lessened. Surely this points the way to the next step—the segregation of these middle cases in colonies where, with the best chance possible of recovery, they also cease to be a source of infection to others. If by the voluntary segregation of advanced cases a perceptible improvement has been made, is it not logical to assume that we may expect still greater improvement when some method of segregation is found for the middle cases, those who find themselves stranded and unfitted for the struggle of existence in the world as at present constituted?

Arguments that such a proposal as that of the Cambridgeshire Tuberculosis Colony must be difficult of realisation are, of course, put forward. It may be pointed out, however, that most of these arguments are founded upon the experience of institutions run on what, perhaps, may be termed strictly conventional sanatorium lines. It is stated, for instance, that patients will not consent to remain in an institution for any great length of time. Who desires this? If our imagination cannot rise beyond the possibility of retaining patients in an *institution* as the only means of segregation, we may well despair. It is not only unreasonable to expect a man voluntarily to

undergo restraint for an indefinite period, it is against all precedent. A life filled with monotonous routine, purposeless work and unbounded leisure, whether for mischief or pleasure, is not to be thought of. Nor again is the continuous separation from the family to be tolerated. Both must be dismissed from our minds or overcome, if we are to make our colony a success.

Both obstructions can be overcome. Here is a concrete example. At Papworth Colony, of which, of course, we have now some considerable experience, experiments are in progress to test the conditions under which men will remain in the country although used to town life, and not town life only, but London life. Our experience is that the first great question to be considered is that of a wage or payment for work done. The difficulties surrounding this question are many and complex. To begin with, we are confronted by certain provisions of the National Insurance Act, in which it is expressly laid down that any man working for a wage forfeits his sickness benefit. Latterly, however, since it has been the practice in some institutions to allow patients to work, the dividing line between remunerative and non-remunerative occupation becomes difficult of definition, and no objection can in any case be raised to the institution paying to an After-care Association a subscription equivalent to the value of the work done; nor can there be any objection to that Association paying over to the patient a sum of money to supplement the sickness benefit, thus enabling his dependents to live in decent circumstances while the man is under treatment.

This is the procedure adopted at Papworth and this method of procedure opens out very considerable possibilities especially for the ordinary insured person. The usual plea put forward by an insured person, especially a married man with dependents, is, that it is impossible for him to live in luxury at a sanatorium, while he knows that his wife and children at home are asked to exist on 10*s.* per week, a sum sometimes supplemented by the Charity Organization Society or by the Poor Law Authorities, an extremely unsatisfactory arrangement, for the average

working man very naturally dislikes accepting relief, even in this form.

In the method adopted at Papworth, the sickness benefit may be augmented (within limits) by *the man's own earnings*, and he has the satisfaction of feeling that even whilst undergoing treatment he is making a definite contribution towards the maintenance of his family, surely a better and more respectable proceeding than relying upon outside help.

This method is new, but it is hoped and believed that it will be found to be thoroughly sound. It will thus be seen that a very definite link is forged between the Colony and the After-care Association. The inducement to earn a wage is so great, however, that it is with difficulty men are restrained from putting in more hours of work than are prescribed. So contrary is this experience to that of most sanatoriums that it may be difficult of belief, but here are some facts. In our newly organised boot-repairing department during the first two months while the patients were still apprentices, it was a matter of surprise that the men could earn 12*s.* per week of thirty-two hours, at the rate of pay current for boot-repairing in Cambridge, this being the rate the men receive. It was feared that our greatest difficulty would be the supply of boots to be repaired, but by means of an advertisement in the local papers and printed cards placed in shop windows, the supply has since been well maintained. The patient is paid 1*s.* 6*d.* per pair; it is therefore a simple matter of calculation for us to see that a fair number of boots must be repaired to enable the 12*s.* per week to be paid to these learners. Further, the two apprentices, one a Limehouse labourer, the other a college cook, have been taught by a practical boot-repairer—a London patient. This man has not only taught these learners but has *earned* his money as an instructor at the same time.

This makes clear four points: (1) That to change a man's trade is a practical proposition; (2) that the work can be carried on under proper hygienic conditions; (3) that the public have no objection to having their boots repaired by consumptives; and (4) that the labour must be subsidised to make it

a practical proposition for the working man. The moral to be drawn from this is, that once a practical proposition is placed before these men, a sound commercial proposition, not one from which they think the institution is making a profit out of their labour, they will seize the opportunity, for they know they are benefiting both from a health point of view and financially, and unless we can make the latter point clear we can expect no success.

It must again be insisted that these men are "middle" cases, that they have tubercle bacilli in their sputum and are cases which, left in their ordinary surroundings, would soon fall to the bottom of the social and industrial ladder. The practical boot repairer realises that he is preserved from the economic struggle on which he would have to engage were he to return to London. The Limehouse man knows he cannot shoulder sacks of produce at the docks as was his wont and the college cook accepts it that without a certificate of restored health the college kitchen is closed to him. When we take into consideration the fact that these men being ex-soldiers have a full pension of *27s. 6d.* per week, it cannot be a matter of surprise that they consent to remain.

As we have stated the Colony can and does offer better conditions of work, conditions that involve no impairment of a man's self-respect, and the State has the assurance that in return it is getting a good bargain in the elimination of infection. Similar results are being obtained in other departments, and from them it is possible to draw only the same deductions. The difficulty is that of demand and supply, and it is here that great effort is needed and a very good business brain required, but at present inquiries for goods and orders placed with us keep the departments busy. It will now be said that this is the greatest difficulty of all, but it has been repeatedly stated in the past that the greatest difficulty was to get the men to work. Having demonstrated that the latter is not the case, it may be confidently anticipated that the other will also be surmounted.

The real solution of the question is a State subsidy for

tuberculous labour and the introduction of labour-saving appliances to diminish the disadvantages under which a consumptive works. If his work can be turned to account—not in the way of reducing the cost of running an institution—who ever thought of reducing the cost of a hospital by employing chronic invalids on the staff? but in making it contribute to the wage of such labour, the other part should be forthcoming from the State as its share of payment in return for its protection from infection. It appears then that the problem is well on the way to solution. In any case let us get rid of the fallacy that tuberculous labour can be made to pay and *of the idea that all the money paid by the State is for the alleviation of symptoms.* Further, let us concentrate on humane and voluntary segregation by making it so attractive that few consumptives, given the option of the facilities I have indicated, will face the difficulties and dangers of open competition. Public opinion educated on these lines will soon insist on being rid of a source of infection so dangerous to its well-being. Once the facilities are offered, if offered in no miserly spirit, we may see the dawn of a new era in the treatment (using the term in the widest sense) of the disease.

The results of the Carpentry and Joinery Departments at Papworth are of considerable interest in that they show that there is an appreciable value in the labour of a consumptive, and that such labour can be turned to good account. At the head of the carpentry department is a trained carpenter and joiner—an ex-patient—who directs the work and instructs the patients. We are now convinced that useless work put forward merely as treatment is waste of time and energy, but we also find that immediately a patient comes to the carpenter's shop he is ready for a light but definite piece of work. There is no waste involved in this procedure nor is there any loss of valuable time. We have, however, to reverse the usual process of training, for whereas in an ordinary carpenter's shop the apprentice is first put to sawing and planing, in the Colony workshop he is instructed in the fitting together of parts which have already been prepared by those who have been longer at

the work and have been passed on to the heavier grades of labour. The process is indeed reversed, but by means of a method whereby a patient is set to make one particular part, in fact is placed on repetition work, no time is lost and his labour is at once remunerative. His interest is also immediately aroused; as his skill develops so his strength increases, and the two factors combined place him on a higher plane as regards productive work. It is our experience that very few patients fall below the 25 per cent. standard even at the beginning of their instructional career, and the percentage increases monthly. On repetition work they may ultimately attain an average of 50 per cent., and even rise to 75 per cent.

When this method of instruction is followed the cost of any given article is considerably less than that of one made from beginning to end by an amateur carpenter or even by a partly trained man. Our method has, no doubt, though unconsciously, been based on the experience of munition works, but from whatever source it comes it undoubtedly meets with very considerable success. Our system of payment for work done is arranged on the basis of an apprenticeship of two months, during which time no wage is paid. After that period a wage equal to the percentage of working capacity is given, if recommended by the foreman in charge of the work. As the percentage of working capacity increases so the wage also increases and, as will be seen from the method of instruction just described, when the patient becomes fitted for more complicated repetition work the wage still increases.

Up to the present, by disposing of our chief product—shelters at the price quoted in the open market, we could during the major portion of the time have paid a wage not much below the Trade Union rate. Take the accounts of the last year to illustrate the financial side of our industry.

There were working in the shop during this period an average of twelve unskilled patients, and after paying the instructor's salary and cost of materials, but allowing nothing for interest on capital or depreciation, it would have been possible to pay

each patient about five-eighths of the Trade Union rate per hour for skilled men.

It must be remembered, however, that the working day is but six hours at the outside, and that even if the labour could be paid for at the rate equal to that of a healthy trained person, the total at the end of the week would be insufficient to support a man, his wife and family in the way in which they should live. Thus it will be seen that the question of a subsidy is a very necessary and urgent factor in the problem. We must not look upon this subsidy as a dole for the relief of the patient (for on this the amount would, according to our past ideas, be too great), rather must we look upon it as money expended for the protection from infection enjoyed by the community. Far better to have this assurance of protection for the community and comfort for the individual than to have the depressing picture of a family in poverty and distress vainly endeavouring to struggle on with an uncertain amount of Poor Law relief and charity unaccompanied by any such protection. In a colony such as we are trying to build up at Papworth, the families of our colonists, being readily accessible, may be so trained and educated that they may be made stronger and safer for the struggle of life than if they were allowed to remain in undesirable surroundings or conditions of poverty and want. However that may be, there is hope of a brighter future even though time may unveil some of our errors.

Let us close by quoting the words of a consumptive—Washington Irving: "What, after all, is the mite of wisdom that I could throw into the mass of knowledge, or how am I sure that my sagest deductions may be safe guides for the opinion of others but in writing ... if I fail, the only evil is my disappointment; if, however, I can by any lucky chance, in these days of evil, rub out one wrinkle from the brow of care or beguile the heavy heart of one moment of sorrow, if I can now and then penetrate through the gathering film of misanthropy, prompt a benevolent view of human nature and make my reader more in good humour with his fellow-beings and himself, surely, surely then I shall not have written in vain."

CHAPTER V

THE "COLONY," ITS HISTORY AND LATEST DEVELOPMENT

THE word "colony" not only requires defining, but the place colonies should occupy in the general scheme for the control and possible eradication of tuberculosis must at this time of day be more clearly recognised. For some years the word colony has been used in one sense only. It was merely the expression of opinion that something more was needed to supplement the treatment meted out at the sanatorium, and it was further an expression of the feeling—in those days not clearly analysed—that if something more were added, the ultimate results of treatment would be more satisfactory.

There can be little doubt that the idea of a colony satisfied the mind's desire, the desire to build a bridge between treatment pure and simple and the patient's return to ordinary life. Disappointment after disappointment occurred when patients left an institution and attempted to carry on their ordinary vocation and the explanation given was that such patients were not sufficiently "hardened off," and that this hardening-off process took a much longer time than was at first considered necessary. It seems that the original colony idea was nothing more than a prolongation of sanatorium treatment, modified no doubt, but modified only on account of pecuniary considerations. One idea was that if the patient's labour could be utilised this prolonged treatment would cost less, his labour being partly remunerative, while such labour would induce increased vitality and would harden off the patient, in other words produce a more permanent "cure." This idea seems to have been linked with that which was presented to all consumptives who were in any manner to retain their health, namely, the light open-air job, and the colony was set up to provide this light open-air job, but with little or no considera-

tion for the economic side of the question so far as the patient was concerned. As long as the cost of running such a place was lower than that of an institution, the project seemed to be justified, but the colony in the first instance did not set out to train a man in an open-air occupation in such a manner that he could with any certainty succeed in the open labour market.

It was with almost the sole idea of prolonging sanatorium treatment on more economical lines that the colony was started. It was soon observed, however, that certain patients with a localised and early lesion, which had become wholly or in part healed by a term of sanatorium treatment, and patients whose general resistance to the disease was great, benefited to no small extent by light exercise in the open air; but while in certain selected cases an endeavour was made to induce such patients to follow a similar occupation when they left the colony, in very few cases did such endeavours meet with success. The evidence of the after histories of patients showed that most of them quickly gave up their new and unremunerative calling and returned to their original occupations. That such cases had temporarily derived material benefit there can be no doubt, but when they were followed up it was found that in the majority of cases a relapse occurred.

The sum total of the experiences of the early colony system showed this, therefore; that while it was excellent in the way of providing less expensive treatment, the results were little better than a course of sanatorium treatment extended over a more prolonged period. Moreover, as soon as cases were admitted which were in any particular not up to the rigid standard required, relapses occurred earlier and with greater frequency.

The "colony," then, was the expression of the opinion that prolonged treatment meant the ultimate arrest of the disease. The whole mind of the medical profession was fixed upon the idea of a "cure" and disregarded altogether the question of the prevention of infection. That only a few very carefully selected cases were suitable and available for colony treatment was a cause for lamentation, but this was attributed to the fact that

the general practitioner was incapable of diagnosing early cases of tuberculosis, and it was claimed that with improvement in diagnosis the results of prolonged treatment would be not only better but more widespread. It was maintained, therefore, that every endeavour should be made to diagnose cases early, and that such cases should receive a prolonged period of sanatorium treatment, followed by a sojourn at a colony, and that then they should pursue that will-o'-the-wisp, the light open-air job. It was found, however, and it is no good hiding the fact, that these extremely early cases refused to undergo not only a prolonged stay at a sanatorium but also the period of time allotted to them at the colony. They said—and there was a good deal of real commonsense in their remarks—that pottering about a garden was not learning gardening, that the time they spent was altogether unprofitable, and that with a wife and family crying out for bread at home, it was a matter of impossibility to stay at a colony which could offer nothing in the way of training; also that without adequate remuneration for work taken up on leaving it was impossible for them to provide themselves with the food necessary to nourish themselves as they were advised by the sanatorium physicians.

If the records of patients at such a colony are examined it will be found that the majority of the men are unmarried—which means that the stringency of the economic factor is greatly diminished—but that even these unmarried men soon after their return from the colony re-entered their original trade, however injurious to health such a trade might be. They did so, not because they did not recognise the physical value of an open-air occupation, but because the economic pressure of the outside world forced them back into their original occupation. "'I cannot dig, to beg I am ashamed,' I will return to my trade."

It was the development of this, the study of the economic side of the question, which has shown that much more is needed than the mythical open-air job. It has stimulated research into the factors which tend to make a trade unsuitable for a consumptive and it has given us a deeper insight into the problems which surround the consumptive and which are now

recognised to be largely economic. It has further originated the idea that a colony may be so arranged as to embrace not only the early conception of a sanatorium, but to combine with it the first principles of after-care, that it may even expand until it embraces the true domiciliary treatment of the consumptive by developing into the colony village. As soon as this stage is reached it becomes clear that a system of partial segregation can be attempted on humane and sound lines, and the colony becomes not only the treatment and training centre but the permanent employer of the consumptive, as well as a great factor in the prevention of infection.

Let us for a moment examine the question of employment for a consumptive. How can such a man be trained in a suitable occupation, and, if he can be trained, how can a situation be found for him, a situation which must, of necessity, be permanent in character?

If the old idea of a light job in the open air were the only possible solution, the task of training would be easy enough; the difficulties would appear later. The odd-job men, the unskilled gardener and the like, are at the bottom of the ladder of the working-class; they are also at the bottom of the ladder on pay-day at the end of the week. Here is a specific case. In a sanatorium was a man who had given up a skilled occupation, that of a machinist in a factory and, following medical advice, had obtained the situation of a gardener in a "small place"—in other words had become a handy man at £1 per week. He had had to return to the sanatorium for a further period of treatment. He was stated to be much worse—an early case no longer. He was asked which he considered the more laborious occupation, that of machinist or gardener. There was no hesitation in his answer, the gardening job was by far the harder. The mowing machine was blamed for this further relapse, and he was told in all seriousness that when he was discharged from the sanatorium he was to say to his employer: "You must get a smaller machine, the present one is too large and too heavy for my use." What is the employer's answer going to be? "I must get a man who can do the work," and

the patient is shelved. Think for a moment what the advice given to this man has meant. He has been induced to abandon an easy well-paid occupation for one three times as strenuous at which he can earn but one-third remuneration, merely because we have worshipped the fresh air fetish, while ignoring the economic factor. The patient has been turned into a casual labourer, placed in the lowest paid category in the labour market, and then it is suggested that he should dictate to his employer as to the tools best suited for his use and to his condition.

Are we children in this matter, or do we deliberately offer this advice because we have no knowledge of economic conditions and no intention of acquiring it? We have only to let our minds grasp the situation, when we study such a case as this, to realise that up to the present our methods have not merely lacked commonsense but have been deliberately wrong. The open-air cry has led to an absurdity. Encouraged by the fact that with the economic struggle relaxed, open-air sanatorium treatment has achieved excellent temporary results, we have concentrated our attention upon the least important part of the complex which makes up the sanatorium régime.

The light job at the sanatorium together with all the accessories—good food, time for rest, freedom from competition—is an entirely different thing from the light job in the open labour market without these etceteras. This fact is being grasped by the lay mind, by the mass of thinking intelligent working men who are now taking such a large and increasing share in shaping the policy of insurance and other health committees.

The medical profession must not be behindhand in laying hold of this vital principle. Why have we condemned the rôle of skilled machinist? Is it because the work is carried on in a factory, where the air breathed by the man would not be as pure as on the Surrey hills, or is it because the work is fatiguing? Glance around any of our modern factories—most of them extremely well ventilated—and see how far physical fatigue is involved in the task on which the operatives are engaged. We shall find, in many cases, that the physical

exertion is slight; the machine does all the heavy work, and heavy muscular effort is almost uncalled for. But what have we instead? We have a pace which is wearing in its rapidity, an anxiety to get through as much work as possible in a given time, a strain on the nervous energy of the employee. Nerve weariness, not muscular exhaustion is the damaging factor in modern factory life. This has been clearly demonstrated by recent researches in the realm of industrial fatigue. Does not this teach us a lesson as to the advice that we should give to consumptives, and point out the way of reform to us? Does it not show us that the way of progress lies along the line of providing working conditions where muscular fatigue is done away with by the employment of machinery?

In the modern factory if the pace of an operative is slackened, or if he is irregular in his attendance, the whole shop is thrown into a state of confusion. But surely it is not beyond the reach of human ingenuity to set up special conditions for workers who are incapable of withstanding the rush against time, and provide them with remunerative employment while doing away with the economic struggle, that rock upon which all consumptives are wrecked.

By a study of considerations such as these, it has come about that a newer idea of a colony for consumptives has presented itself, a newer and larger conception based upon a fuller appreciation of fundamental principles of what ought to be done for these unfortunate people.

With these considerations in our mind we are in a better position to define the term colony in relation to tuberculosis, and as far as we are aware this has not been attempted before.

"A tuberculous colony is a community of consumptives in which hygienic and economic factors have been adjusted to suit the abnormal physical and mental state of its members."

The colony, thus defined, involves an expansion of the rôle of the sanatorium, not its abolition. It is the development of those factors which make sanatorium treatment such a success—factors which, hitherto, we have ignored, or knowing them have been too faint-hearted or too parsimonious to put

into operation. Breadth of vision, a keen perception of realities, a generous spirit, must rule in the consumptive colony. The spirit of after-care committees with their meagre help must be superseded by that new spirit which calls for an England fit for heroes, the spirit which will not tolerate a return to the conditions of life of the working classes which existed in 1914, conditions that produced our large C3 population, and a great part of the burden of tuberculosis with which we are saddled to-day. In the colony we must have conditions which satisfy our ideas of increasing resistance to the disease, a life made up of purposeful work carefully regulated against excessive fatigue; in fact the environment necessary to the upbuilding of fine and healthy manhood. We must not imagine that such a colony can be brought into being by the mere printing of a series of regulations, especially if those regulations are bound up in red tape, nor must we suppose that the cost of colonies can be calculated at so much a bed, or regulated by measurements of air space when the whole firmament of heaven is above us. The one thing to be avoided is the stereotyped institution, that soul-less mass of bricks and mortar carefully built to a standard plan from which there must be no deviation. When once a stereotyped plan is followed, originality will be stifled, the spirit of research killed, the path of progress barred for ever.

The new idea of the colony for the tuberculous from its inception has been dwelt upon, and shown to be an expansion of the older idea because it contains the fundamental principle for all future action. We must always remember that patients suffering from pulmonary tuberculosis are after all something much more than cases. They are individuals, and as such differ from one another in a thousand ways. It is folly to pass all these individuals through a stereotyped régime and imagine that the result will always be the same. They cannot all be taught gardening, for example, and unless they are taught a new trade or provided with the old one under very special conditions, our work has been in vain. Restored health is all very well, but how long will that state of health

continue unless the man can be assured of a remunerative calling? To provide a living wage, although a man's physical capacity is but 50 per cent. or 75 per cent., is the aim, must be the aim, of our endeavours. To find that opportunity in the outside world to-day is wellnigh an impossibility. Our duty then is to create this opportunity. In other words our duty is manifestly to create a condition of affairs where the man can live a perfectly hygienic life, earning a full wage for the number of hours he is able to work, relieved of the economic struggle, and thus keeping the disease in check.

It is one thing to advise the working man, it is quite another to give him the opportunity of following the advice. Herein lies the difficulty of dealing with the consumptive; herein lies the failure of present forms of treatment. Up to a certain point sanatoriums have fulfilled a useful purpose, they will continue to fulfil that purpose only if they are progressive enough to become part of the new colony system. Without this further development they will fall into decrepitude and decay. Let us make no mistake about that. Sanatoriums are at the parting of the ways. There is no fear for their ultimate survival if they cast off their stereotyped methods and expand in the right direction, but if they lag behind on the path of progress they are doomed to failure. The principles on which their treatment is based are sound, it is the way in which these principles have been applied, and the narrow way in which they have been interpreted that is wrong. The colony is not a competitor which is to be feared by the sanatorium, it is rather the saviour of a system which without its aid is likely to end in disaster.

The true colony consists of a sanatorium, in which all that is best in sanatorium treatment is carried out, but with the addition of an industrial section where the treatment may be prolonged and training in a suitable occupation begun. It thus comes about that instead of the patient being bored with purposeless exercises and almost unlimited leisure, he is engaged in a venture in which he may forget that he is undergoing treatment at all, and is gradually and almost unconsciously led on to a life where working at a trade becomes a pleasure. But

the colony idea goes beyond this; here is provided permanent employment under ideal conditions in a variety of trades, paying trades union rates of wages to its workers, and thus contributing the conditions necessary for the foundation of a village community combining the advantages of industrial work with the amenities of country life. This branch of the colony's activity is the crown of our endeavours, for without it in many cases our work would be incomplete. A partially trained man, which is all that a re-educated consumptive can hope to be, cannot find a place in the open labour market. Trades unions are against him, employers have no use for his labour. But in a properly managed industrial section at a colony his labour can be made largely remunerative. It is a matter of surprise to many persons that it can be so, and we hope shortly to publish facts and figures demonstrating exactly how far this can be attained. Let us be quite clear on one point, namely, that none of the theories as to consumptives being made self-supporting are based upon experience. A moment's thought will be sufficient to decide the point. A man with one leg is not likely to win a race in competition with a man with two. Similarly, a man with a considerable lesion in his lung cannot be expected to compete with a man who has no such wound. Appearances may be deceptive, but it is only because the wound in the lung is not visible that such hopes are indulged.

It is impossible here to enter into the question of how the deficit is to be met—the difference between the re-trained consumptive's earning power and his necessary living wage. It must suffice to point out that the community would be repaid over and over again for a subsidy which would be an insurance against infection, and that the payment of such a subsidy would only be possible in the case of consumptives who consented to place themselves under medical supervision and to live in conditions which would minimise the risk to the community. It would be futile to subsidise men who continued to live and work in industrial centres, where, even if special houses were built for them, they would still be carrying infection to their fellows in workshop and club. The conditions offered by the

industrial colony would alone provide a suitable field for this far-reaching experiment. In the colony alone—that is, the new type of colony—is it possible to cater for the mass of consumptives who have active disease of one or even both lungs, for the overwhelming majority of consumptives, therefore, who are brought to our notice. We need not pick and choose the early cases only, we select those cases which are incapable of helping themselves in the outside world—the men who are down and out. What does this mean? It means that by segregating this mass of infection we are directly preventing the spread of the disease.

We have now come to the root of the question, the central and vital idea of the colony—that of benefiting the individual and, at the same time, the community. How often have we been distressed by the fact that six months after a patient's return from a sanatorium he has broken down again and we have had no institution to which to send him. He is not "early" enough for a sanatorium, nor "late" enough for a home for the dying. Domiciliary treatment, with or without an allowance for extra diet, a slow and sure descent down the social scale, finally ending in the workhouse or in some miserable dwelling, is the prospect before the unhappy patient. This catastrophe we want to avoid, not only for the sake of the individual but also for the sake of the community—and the community daily becoming more conscious of the position is demanding that something shall be done. We can talk about the cure of tuberculosis until we are tired, the general public sees those cases which are at present uncured and incurable, and it has determined that they shall be dealt with on sound and humane lines. When, therefore, we realise that by dealing with these cases on colony lines in the way already described we are at the same time benefiting the community, we may safely assume that we are doing the right and useful thing.

We have heard opinions expressed as to the danger of turning our consumptives into "lepers." Such a danger would not be feared by anyone who had any actual knowledge of the new

colony system of isolating the disease. The consumptive who is unable to work is left to struggle as best he can in an environment which is entirely unsuited to his condition, an out-patient now at this hospital or dispensary and now at that, classified as a "hopeless case," appealing for charity first from one source and then from another. This is the man who under present conditions is the leper. The position is expressed very clearly by a patient who is now a resident at the colony at Papworth.

"The great pleasure which I enjoy after having seen so great a success crowning your efforts in the uplifting of the 'lot' of the white plague stricken fraternity no words can tell, they are empty. I am simply overjoyed to have actually seen in practice a new and profitable future opened out. Hope, yes, hope, is written in bold type on the face of the workers, they having once again found joy in living. Doctor, I know the feelings of a 'lunger' too well, he is down and counted out, and he knows it, and unfortunately the general public do not understand him, or rather his complaint, the only part they do understand is to step two yards back so soon as one mentions that tuberculosis is the trouble. I know it. My friends have done it, friends that years ago stuck tighter to me than a brother, the same friends since have seen me spend my small fortune of —— pounds in running about various parts, seeking the health which never returned, to last—for here am I now but half a man.

"My wife asks that you allow us to have the house next to ——, as the side wall, being on the south side, will make a warm house."

Men such as this are unsuited to their environment in a world peopled by healthy subjects, unsuited to a world in which the economic struggle is stern. It is beside the mark to talk about treating them as lepers when it is proposed to make an environment for them best suited to their condition and where their families can live with them. They require no compulsion to come to such a colony. They accept the offer with open arms. They are ready to fly from the outside world and to enter a Sanctuary where they are able to do serious work once more. Let those who decry all this look carefully into the matter

before they condemn. What have they to offer in the place of the colony system? We are now told that it is proposed to build special houses for consumptives in certain parts of certain towns. But good houses without the means to pay the rent will not suffice. When our consumptive is out of work, a good house will not, under present economic conditions, be his for long. Examine the history of our patients and you will often find that at one time they lived in good houses that they can no longer afford. Do not imagine that building houses is going to solve the tuberculosis problem unless other means are employed. We all agree that houses that are specially adapted for families infected with tuberculosis must be built. Why not build them in the colony where suitable work can be provided as well as suitable housing, so that protection for the community may be gained as well as comfort for the consumptive?

Tuberculosis is an infective disease, in certain conditions a highly infective disease. The greater the economic struggle, the poverty, the overcrowding, the less the resistance to the disease and the more dangerous the infective agent. The chance of receiving a big dose of tubercle bacilli under these circumstances is infinitely greater, as also is the chance of lessened resistance. We have, therefore, all the essentials for the spread of the disease. What does the colony system aim at doing? It aims at getting rid of both these factors, and it succeeds in its aim. But it is the new colony which does this—the colony which caters for the middle case, the case expectorating bacilli in considerable numbers, the case that, up to the present, has been left to drift. The new colony can train such a man, and having trained him can offer him permanent employment. The old colony aims at training only in open-air jobs and only carefully selected cases—those closed cases which are in fact not a danger to the community, and which make little appreciable difference to the real tuberculosis problem, though such cases, except in rare instances, do not retain their acquired health. They break down and cannot again be received at the colony. The scheme was of limited scope. It

must now be widened, and its real significance and usefulness developed.

Here we have the fundamental difference between a colony such as Papworth and the ordinary sanatorium, even when the latter includes light work, mostly of a purposeless nature, or, if of a purposeful nature, not calculated to enable the patient to earn his living. We have heard that a stay at a sanatorium is chiefly valuable as an educative measure. This may be a good idea so far as a well-to-do person is concerned, but it is utterly inadequate when sanatorium precepts cannot be put into practice and, as we all know, London slums are not a favourable environment for such practice. The colony aims, not only at the provision of education in the principles of hygiene and in the value of fresh air, but also in a suitable trade; moreover it provides that trade under the best possible conditions. We cannot enter into details as to the management of the industries set up, each would take a chapter to itself, for each industry has its own peculiarities, its own methods to be modified and applied to render it suitable for adoption by the consumptive. Broadly speaking, however, it is essential that a skilled instructor or foreman should be in charge of each department, and, that *such instructor should be an ex-patient.* It is a matter of great importance that the instructor should know and thoroughly appreciate the peculiarities, eccentricities, and difficulties of his pupils. No healthy working man can realise the condition of a consumptive. No amount of teaching can bring home to him the difference between incapacity for work and shirking or malingering. If, however, the instructor has himself suffered from the peculiar nervous and physical fatigue inseparable from the disease, and has by a course of treatment known how to recover from it, he is ready to appreciate and understand the phenomenon when he meets it in his fellow-men. How often have we heard that healthy gardeners in a sanatorium express themselves in no measured terms with regard to the labour of patients sent to them to work in the gardens. It is summed up in the expression: "I cannot be bothered with these people, they are simply a hindrance to

me." If the man had been through the mill himself, an entirely different frame of mind would be his. At Papworth the gardens of five acres are managed and worked entirely by consumptive labour. They are well cultivated and heavily cropped, but the principles laid down have been scrupulously followed. Similarly in the other departments. But in each it is necessary to have a second in command. The health of the foreman ex-patient is an uncertain quantity, and it is simply courting disaster to rely on a single string to one's bow. Another fundamental point is that the industrial section of the colony must be a separate entity from the institutional part of the colony. It must be clearly understood that the colonists working in the various departments are not having their labour exploited for the benefit of the institution. On no account must the colony attempt to pay its way by the employment of cheap labour, nor indeed must it receive any of the profits of the departments which are linked up with it. Each department is managed as a separate business concern; each has its own separate accounts, but all departments are linked together under a business manager who, himself an ex-patient, employs consumptives in his office. Papworth industries, therefore, are run by consumptives for consumptives. The whole organisation is, however, watched over by a healthy person, and this individual sees that for all and sundry the factors which in the ordinary commercial world are detrimental to the well-being of a consumptive are eliminated. Already the industries have a yearly turnover of many thousands of pounds; "Papworth Industries" is no small concern. Serious work must be put in by all those employed, life is again given that zest which is all the more real and stimulating because it is triumphing over unfavourable circumstances. We compete in the ordinary markets with our goods. There is no undercutting, but as manufacturers of articles for the wholesale trade we fall into line with those who produce goods in the ordinary commercial way. To sum up, we might say that a colony takes and makes use of all that is good in industrial life, whilst rejecting or altering much that is detrimental to the welfare of the consumptive worker.

From the above survey of the tuberculosis problem the ordinary medical aspects have been omitted. This does not imply that the medical part of the scheme is of less importance than the social or the psychological. Life is made up of a number of factors, all of which must be studied and brought under review. The narrowing of the vista is responsible for the disappointing results so far achieved. That the task is difficult is not to be gainsaid, but once the difficulties are appreciated they can be analysed and finally overcome. That we are on the right lines is proved daily by the number of letters, all pointing the same moral. Here is an example, one of over a hundred.

"The above is a man, aged 37, whose employment was that of a ship's steward on the P. and O. Line rather more than a year ago. He attended at ——— Sanatorium. The result was very satisfactory and the doctor was pleased with Mr X.'s condition and advised him to get light work. This he had been unable to do. He had been living with his people, and although their circumstances are fairly comfortable, the man is getting very disheartened at not obtaining employment, and this will, in time, react disadvantageously upon his health. Is there any chance of his being admitted for work or training to Papworth Colony?"

It is always the same story, that hunt for a light open-air job acting upon medical advice. Is a ship's steward to be turned into a gardener or a casual labourer? It is useless to labour the point. *It cannot be done* in the outside world, but employment can be found in a colony, the man can be trained, and then employed at a remunerative rate of wages. Is not this better than dismissing the case even with the best advice which it is impossible to put into practice.

Will colonists come? The answer is that we are working at full pressure at Papworth to provide accommodation, and are called upon to take far more than can be admitted. Still they come, anxious to work, anxious to earn even a part of their livelihood. The colony is being keenly discussed in America. Here are extracts from a report containing the

views of consumptives who were asked whether they would accept accommodation in a colony if such were provided.

"I most heartily endorse the scheme you proposed to-day. Such a community would supply the logical stepping-stone to 'full-time' work, without which we must acknowledge our physical unfitness or our being tuberculous when applying for work. Either one of these is going to make our return to a useful life infinitely more difficult. I am about to leave the sanatorium, and a community of this sort would solve my big problem. I know the situation that is confronting me now, because I was cured once before." (A young woman.)

"Personally, I should be delighted to be among those privileged to enjoy the advantages to be had by an arrested tubercular patient of a few years spent in a tuberculosis community such as described by Dr Pattison to-day in his talk to the Trudeau patients. It seems to me that such an arrangement and such safeguarding of one's health by life in such a place is the only really sensible course to be considered by any arrested tuberculosis patient who realises the seriousness and insidiousness of tuberculosis...." (A young woman.)

"From personal feeling and conversation with others I am thoroughly convinced that the establishment of a community where tubercular patients unable to work full time could find limited work under good living conditions would be a boon very greatly appreciated and that no difficulty would be found in filling such a community to its full capacity." (A young man.)

"Your project, I believe, will be a boon not only to the tubercular, but a welcome relief to physicians of sanatoriums, who, if advised of the work and kept advised of the progress of the town, would send plenty of arrested cases there, many of whom, I believe, would become permanent residents. I, for one, would be glad to cast my lot in such a town, and wish you every success that the project may become a reality." (A young man.)

"This seems to me to be the most encouraging thing I have ever heard of for tubercular patients. I for one am certainly heartily in favour of such a move. I venture to say that the largest percentage of patients feel as I do about the enterprise.

I have been told that I can go back and do a full day's work anywhere I want to, but I am afraid to take the chance of living again with well people and doing as I know I would have to do." (A young man.)

The colony will, then, find its place in any complete scheme for the treatment and prevention of tuberculosis. The dispensary will cease to be run on out-patient hospital lines, doling out medicines and cod-liver oil and malt. It will be what Sir Robert Philip originally intended it to be—a clearing house—and one of its main channels of clearance will be the colony. The dispensary will be the means of providing a link between an environment which is unsuited to a consumptive's condition and the colony environment which is specially arranged for his convenience and happiness. It must not be supposed that the colony as here described is the end of all our endeavours. Colonies must be progressive communities. There is no last word in the treatment of tuberculosis.

While research into all the many problems which present themselves must be prosecuted with vigour, it is clear that experiment along the lines indicated by the colony system must not be neglected. Let us cure the disease by all means, but let us also procure the safety of those who are still whole. In the present state of our knowledge we cannot guarantee cure, but we can prevent infection, and to this end the colony will be found to be an instrument of no mean service.

CHAPTER VI

PSYCHOLOGY OF THE CONSUMPTIVE

"MANY have thought it no lost time to exercise their witts in the praises of diseases, some have wittyly commended baldness, others extolled quartane agues, and some have left incomiums of the Gout and think they extenuate the anguish of it when they tell what famous men, what Emperors and Learned Persons have been severe examples of that disease and that it is not a disease of fooles, but of men of Parts and Sences; but none have attempted the incomium of Consumptions, which have so well diserved as to this and the other world, giueing a Merciful conclution to the one,

a solemn preparation to the other: he that Prays against tormenting diseases or sudden death hath his Lettany heard in this disease, which is one of the mercyfullest executions of Death, whose blows are scars to be felt, which no man would be killed to be free of, wherin a man is led, not torn, unto his transition, may number his days and even his last hours and speak unto his Saviour when he is within a moment of Him." T.B.[1] M.D. 1690.

Thus writes Sir Thomas Browne, and it is clear that this great thinker and physician realised something of the mental attitude of those of his patients who were the victims of consumption, a disease probably recognised at that time in an advanced form only. But such testimony, even that of a keen observer, a shrewd thinker, and an experienced man of the world, affords but secondary evidence of the state of mind of those who suffer from this disease, and conveys but half the truth.

During the last three or four years, while experiments have been in progress at Bourn and later at Papworth Colony, a curiously steady and persistent discussion has gone on in the world outside as to the working capacity of the consumptive, and there has been very free criticism of the patient, his instability, his discontent, his attitude towards training, his place in the colony, and the like. The ex-service man suffering from tuberculosis has been much to the fore. It is impressed upon us on all hands that the consumptive soldier is difficult to control, that he defies authority and jibs at restraint. Indeed, the "Consumptive soldier problem" is discussed as if it were an entirely new problem, and one altogether distinct from that of the insured tuberculous individual. The difficulties described in dealing with him are almost as varied as numerous, but as a whole they are usually excused or explained by some such statement as that the man has been long under discipline and being now a free

[1] Sir Thomas Browne, from the "*Commonplace Book*" of his daughter Elizabeth Lyttleton, now in the possession of Dr Geoffrey Keynes. For this, and the reference to the Arch-Duke Francis Ferdinand of Austria, we are indebted to Mrs J. N. Keynes, Hon. Secretary of the House Committee of the Papworth Colony.

man, feels that he will have no more of it. He is restless and anxious to be his own master again. He is satiated or, as he himself puts it, "fed up" with hospital routine, and it is small wonder that he does not readily submit to further restraint just when he is looking forward to rejoining his family and friends.

All this may be true enough, but in discussing the present day soldier-consumptive it must be remembered that he is not a type apart, being first and foremost a civilian. It was a citizen army that won the War, and the above arguments advance us little in explaining our lack of success.

The truth seems to be that owing to the great number of discharged soldiers suffering from well-marked and active tuberculosis, our attention has been temporarily concentrated upon them, and difficulties experienced long before the War have presented themselves in an aggravated form. Complaints of the same character used to be made concerning, and by, the ordinary patient sent to an Institution, though little was heard of him outside the Institution, and no great heed was paid to his idiosyncrasies. The urgency of the problem of the ex-service man, the demand made by the public that the best should be given to him, and that even after treatment at an institution he should be properly protected and cared for—a phase of the question little considered before the War—these new considerations have brought into high relief the psychological problems involved in our dealings with the consumptive.

We are led to ask whether we are really satisfied with the superficial explanations, casually or thoughtlessly offered and often equally lightly accepted. When we come to consider the matter, do we not find that in private life our attention has, time after time, been drawn to the curious traits of the consumptive and his attitude to his life and work, though we have usually dismissed them with a shrug of the shoulders and a shake of the head, indicating that we regard such a man as incapable of behaving like a rational being? In the same way we have found that our advice to patients to

seek a new and more suitable occupation has been ignored, and our best suggestions and efforts treated with contempt. With such persistency have our efforts been thwarted and our best suggestions rejected—and with such unanimity is this result reported as the experience of Institutions—that it is well worth our while to give careful attention to the matter, to probe the question and see whether there is not in the subconsciousness of the consumptive, both a psychological and a solid economic basis for what seems to us mere lack of commonsense. Such investigation is of urgent importance if we are to make a success of colonies established for the prolonged treatment of the consumptive; and of vital importance should these colonies grow into communities in the probable course of evolution.

The problem is one that can be solved by no superficial examination. Fundamental principles, not those that appear on the surface, are involved, and it is only by a careful study of the mental outlook of the consumptive and an analysis of his attitude to his surroundings and his fellows that even a tentative solution can be reached. One difficulty lies in the fact that few of our ex-soldier patients are capable of expressing their own views or sensations, while fewer still are capable of analysing them. In spite of this, and although a certain reticence has to be overcome, it is possible with some perseverance to elicit much information—information most valuable in building up a scheme by means of which the tuberculosis problem may eventually be handled socially, psychologically, and therapeutically, with some hope of success.

The information already gathered seems to indicate—of course in varying degrees and variously expressed—motives and trends of thought common both to the uneducated and *quasi* inarticulate consumptive and to those of literary tastes and attainments. That a distinction must be made between these two broad classes is obvious; for whereas in the one when physical energy has declined, response to external stimulus declines also; in the other there is a process of compensation by which concurrently with the loss of

physical energy there appears, for a time at any rate, an increase in mental activity.

In dealing with the latter class two outstanding masters of diction have come to our aid—John Addington Symonds and Robert Louis Stevenson—both of whom depict for us in vivid words the annihilating prostration that alternated with their fits of restless activity.

Writing from Italy to a friend, in November, 1863, Addington Symonds says:

I have had a long and stupid journey....Since then I have seen, grown and suffered much, I have grown in knowledge of my insufficiency and in resolves—a barren growth. I have suffered from terrible physical and mental weakness. An oppression under which I hope you may never groan, a darkness into which no angel can descend, has weighed me to the earth. Here I am burdened, and in England I have no rest. I do not know what will become of me.

And yet during the whole of this time he says he was able to walk as much as he liked and could see everything which did not involve mental strain.

"Accordingly," he says, "with indefatigable curiosity I drank in buildings, statues, pictures, nature, the whole of the wonderful Italian past, presented in its monuments and landscape[1]."

Symonds at this time was, as we see, no bed-ridden consumptive; yet he was driven hither and thither by uncontrolled physical and mental impulses. Some artificial stimulation of the nerve centres can alone account for his restless energy and his no less unnatural depression and fatigue.

"I was deeply wounded in heart, brain and nerves, and yet I was so young," he writes in another place...."The physical illness—that obscure failure of nerve force, which probably caused a sub-acute and chronic congestion of small blood-vessels in the brain, the eyes, the stomach perhaps, and other organs—was the first source of this *ennui*, but there was another and deeper source behind it, and of which in fact it was the corporal symptom."

A typical consumptive, he explains away his symptoms with some elaboration, a point to which we will return later

[1] Diary.

when we discuss and compare Symonds' account of his feelings with what we observe in our colony patients.

I had not recovered from the long anxiety caused by ——'s treacherous attack. Then excessive headwork, superfluous agitation concerning religions and metaphysics—the necessary labour of an ambitious lad at college and the unwholesome malady of thought engendered by a period of *Sturm and Drang* in England depressed vitality, and blent the problems of theology with ethical and personal difficulties. Such I think were the constituent factors of my *ennui*. I grew daily more oppressed. I returned to England weaker than I had left it.

In a short time, however, though he was still in poor health, a more cheerful note was sounded in his letters. The *spes phthisica* reasserts itself, but as usual, the classical *spes phthisica* is succeeded by the most profound despair:

But I am not daunted and I look on this kind of life as salutary in many ways, especially as a corrective of sybaritic habits, and also as a prelude to what must inevitably be the isolation of many years in the life of all men.

The swing of the pendulum was rapid enough, for in the following month he writes:

I wish and cannot will...others see and rest and do—but I am broken, bootless, out of time; sinews, strong nerves, strong eyes are needful for action. I have none of these and besides I have a weakness ever present. It eats my life away. Truly this is no fable.

Here Symonds has described vividly, as many, if they were able, would tell us, the innermost thoughts of the consumptive. A mysterious something seems to check and to guide the sufferer; a force irresistible and relentless, stultifying action. A fear or dread, an internal and unmeasured, because unmeasurable, force, intensifying anxiety, rendering the power "to will" of no avail; thwarting desire or turning it into unexpected channels when the *spes phthisica* is present, and when it is absent, multiplying fear and blighting hope.

"Yet I have ambition"—Symonds goes on—"Truly I wish and will not. Others will, do, they enjoy. They have a work in life, they have brains clear and strong, nerves equable and calm, eyes keen and full of power.'

It would be difficult to find a more pregnant passage, or one that expresses more powerfully the attitude of a consumptive to those who are whole and full of health.

The observer, who, in addition to pursuing a knowledge of medicine, takes an interest in matters sociological and psychological, cannot but be impressed by the great differences which, from time to time, manifest themselves in the attitude of the consumptive patient to his work and his surroundings. These differences which occur even in healthy, normal individuals appear in an exaggerated form in the man whose nervous system is periodically and artificially stimulated by the toxic secretions of the tubercle bacillus. His intellectual work is often of a superior type. His perception is more vivid, his emotions more acute, though his judgment may not be so sound nor may he be able to maintain the continuous steady output of the man with more stable nerves. His powers of enjoyment are often great, greater perhaps at times than those of the healthy individual, but to counterbalance this he is subject to periods of depression of which his more solid confrère knows little. Perhaps we have no better example of this type of consumptive than Robert Louis Stevenson, whose wanderings depicted in his *Life* and letters, have been edited and commented on by a medical member of his own family[1]. We have here one of the most interesting pictures of the pathology and psychology of tuberculosis ever given to the world. Stevenson was one of the big-brained workers, with no proportional physique. He was subject to alternating periods of high spirits and of deep depression; when resting and recuperating he was intensely dissatisfied with himself and his surroundings. During the periods when he did his best work he was as one on the wings of the wind. He was the equal of any man, ready to undertake any task; then came the inevitable recoil and with it morbid introspection.

To turn again to our army pensioner. When he realises that he has become a consumptive, and as the toxin works its way, what feelings of rebellion are engendered! The fight

[1] *Life of R. L. Stevenson*, by Graham Balfour. Methuen & Co.

against fate is harder for him than for men with intellectual resources. What wonder if, where they become morbidly depressed, he becomes resentful and determined to kick over the traces! You may place him in the most favourable conditions, in the most interesting surroundings, but unless you occupy his mind and body he becomes a prey to the desire for change. He thinks he could do better, and it would be better for him, anywhere than where he is.

Stevenson says of Davos:

A mountain valley, an alpine winter, and an invalid's weakness make up amongst them a prison of the most effective kind.

To him it was all wearisome monotony, and his biographer points out that, apart from the exhilaration of the climate, there was little that he liked in Davos. More especially did he dislike the cut-and-dried walks alone possible to him, a monotonous river, the snow in which he could see no colour and the confinement to a single valley.

"The mountains are above you like a trap," he wrote; "but you cannot foot it up the hillside and behold the sea as a great plain, but live in holes and corners and can change only one for the other."

He shies against segregation similar to that of the leper colonies of the middle ages. He objects to be one of a

"marred and moribund community with its idleness, furnished tables, its horse-riding, music and galantries," which "under the shadow of death all confounds the expectation of the visitor...in which the patients are rarely in pain, often capable of violent exercise; all bent on pleasure and all within the limit of the precinct free."

There were times, we are told, when he was tempted to risk everything and go back to the old life and the old friends, but he resisted temptation and fought on manfully to the end. He had his reward when his medical adviser set him free to find a home in more congenial surroundings. Seeking freedom, wandering, writing, he could be happy—not otherwise; health could only follow occupation.

One more quotation from this man, with his almost uncanny gift of introspection, will help us to understand the ill-fated throng for whom he speaks:

There is nothing more difficult to communicate on paper than this baseless ardour, this stimulation of the brain, this sterile joyousness of spirits. You wake every morning, see the gold upon the snow peaks, become filled with courage and bless God for your prolonged existence. The valleys are but a stride to you, you cast your shoe over the hilltops, your ears and your heart sing; in the words of an unverified quotation from the Scottish psalms, you feel yourself fit "on the wings of all the winds to come flying all abroad"...yet it is notable that you are hard to root out of your bed; that you start forth singing, indeed, on your walk, yet are unusually ready to turn home again; that the best of you is volatile; but that although the restlessness remains till night, the strength is early at an end. With all these heady jollities you are half conscious of an underlying languor in the body; you prove not to be so well as you had fancied; you weary before you have well begun and though you mount each morning with the lark, it is not precisely the songbird's heart that you bring with you when you return with aching limbs and peevish temper to your inn.

Stevenson and Symonds can thus voice their moods and describe their feelings, but we must not assume that the man who does not share their powers of expression is not the victim of similar emotions. The poison flows in his veins as in theirs, the treacherous stimulant lifts him up only to fling him down to lower depths. The consumptive recognises his weakness, his failure in competition, his inability to do what others accomplish, more fully than most of us can possibly appreciate. It is the very keenness of his disappointment that so often leads to inaction, the feeling of inferiority that must be hidden by a gorgeous make-believe, a system of camouflage employed to a greater or lesser extent by all consumptives.

Only if we bear all this in mind, can we begin to form any useful estimate of the mentality of the consumptive, or visualise the patient's real reasons for his desire to be free from any constraint. The difficulties of dealing with ex-soldiers may be very largely overcome if these points are made the subject of sympathetic understanding, and the environment in which the men are placed rendered more comparable with that of an ordinary community, while being brought into accordance with the physical and economic necessities of their changed outlook on life. This matter has also another bearing which is usually overlooked. The work of consumptives cannot be safely super-

vised by a robust, healthy foreman. At the Papworth Colony it is no longer a matter of opinion but of profound conviction that a healthy, robust, lay-supervisor is a square peg in a round hole, and any system of training in which such healthy foremen set the pace is bound to result in friction and probably in disaster. The healthy man is unable to put himself in the consumptive's place, to appreciate his disabilities, to understand his outlook; while the consumptive, continually comparing himself with the normal individual, is constantly reminded of his inferiority as regards strength and working capacity. This must be avoided at all costs, and the only safe way is to place patients in the charge of a man who has been a patient himself, who has the same acquired temperament, although with returning health he has learnt to control and regulate it. This is the man who by understanding and example can encourage the patient without exhausting him, and who may prove the most valuable coadjutor that a medical superintendent can hope to have. It is as important to instil courage and determination into a consumptive patient, to strengthen his moral fibre, as it is to provide him with superfluous adipose tissue. The latter is indeed easily acquired, the former requires for its inculcation and development, skill, judgment, patience and sympathy.

We must remember that every consumptive is a wounded man, wounded not only in body but in spirit. The severity of the blow to our patient when the diagnosis "consumption" or "tuberculosis" is announced is not always appreciated; it is a blow, too, from which the sufferer seldom rallies completely. As time goes on the pain may become quiescent or dormant, but the bruise remains, and any thoughtless touch may renew the inflammation.

"Two days and two doctors sufficed to cause a change of view," writes Symonds, after an unfavourable report from his physicians. "Health is now once more the absorbing preoccupation with me. I have suffered dreadfully for more than a year from unrest, from moral fatigue and from strange morbid irritabilities. At last, of late, the sense of utter weariness has been crushing. The whole explains itself now. I am too stupid to write. The blow has stupefied me. I somehow did not at all expect it. The struggle for life is now to be carried on with weakened force, and under worse conditions."

How can we refuse sympathy and help to men who have to carry on against such a handicap? And to this, in many instances, is added anxiety for the care of wife and family, the dread for their sake of failing strength, of descent in the social scale, of the brand of the Poor Law. We cannot but urge, nay, even fight persistently, for better after-care methods, some of which we have already advocated strenuously, in season and out.

We are doing at Papworth what we can with limited resources to meet the need, and many patients accept with heartfelt gratitude the offer of our terms for an indefinite stay at the Colony. Here, in well-planned surroundings, and with a life of modified, but still real, usefulness stretching out before them, they would, had they the pen, say with Symonds:

> If I am doomed to decline now I can at least say that in the five years since I came here dying, I have had a very wonderful Indian summer of experience. The colours of life have been even richer, my personal emotions even more glowing, my perception of intellectual points more vivid, my power over style more masterly than when I was comparatively vigorous. It seems a phase of my disease that I should grow in youth and spiritual intensity inversely to my physical decay. This may be a phenomenon of phthisis and for this reason noteworthy. I feel it in myself so forcibly that I cannot refrain from writing about it, though this has the semblance of excessive self-scrutiny. Ah! How I do love this beautiful world, and how keenly I feel it all. It is almost pain to grasp its loveliness with this intensity when the body is so dragging.

In the Colony the consumptive is encouraged to feel that he is doing good work, that he is of use in the world, and that whilst taking such precautions as may be necessary, he need not be cut off from his fellows; indeed, except in certain matters he may live much as do his colleagues. He is not a leper in the old sense of the word, a man with no duties to society, or upon whom ordinary moral effort makes no claim. In the Colony he is placed under conditions in which his self-respect is maintained, but in surroundings where he is not called to the impossible task of competing with the strong man of the outside world. He is doubtless a damaged man, but after a time he comes to realise that he is one of many, and

that after all he enjoys advantages that are not at the command of many of his more healthy colleagues. In the Colony, where efforts are made to suit the burden to the strength of the bearer, each man has a chance of being *primus inter pares* and "Lord of himself though not of land."

"A consumptive must learn to be a consumptive." That is the hard lesson he has to learn. But those who have to deal with consumptives have also much to learn, many things other than the extent of the lesion in the lung. Clinical signs form but a tithe of the whole, a mere splash in a picture of many tints and shadows. To understand the elements and details of which the picture is composed, to fill in the wonderful mosaic, is a task of great magnitude but of fascinating interest, and it must be mastered both in outline and in detail if success in our present venture is to be attained. It is only by the most careful study of the patient's outlook, by assiduous care in placing him in surroundings where he may work without worry, where the trials of everyday life may be reduced, that the irritability of the consumptive's mind can be assuaged. How far this may actually be accomplished is still a matter for consideration, but attempts already made have been so far successful that a broader and more sympathetic line of treatment is now called for, and may be adopted with some confidence that we are advancing, though slowly, on the road to success.

This is but a fragmentary contribution to a vast subject, and is thrown out in the hope that others will pursue similar lines of enquiry. The part played by this disease in the development of civilisation would in itself provide an interesting study. It has directed or checked the migration of races, it has preserved the temperate regions for the white man with his greater powers of resistance, it has seemed in many instances to have been the handmaid of genius, it has precipitated great catastrophes. A curious side-light is thrown even upon the most recent events by Count Czernin's description in his *Memoirs* of the temperament of Francis Ferdinand—a typically phthisical temperament.

The following are the main outlines of the sketch that Count Czernin has drawn of his friend and patron:—

The Archduke and Heir to the Throne was a man of very peculiar nature. The main feature of his character was a great want of balance. He seldom followed a middle course, and was just as eager to hate as to love. He was unbalanced in everything; he did nothing like other people; what he did was done in superhuman dimensions. His passion for buying and collecting antiquities was proverbial and verged on the fantastic. He was a first-rate shot, but sport had long since ceased to be attractive to him, except as a wholesale massacre, and the number of game shot by him reached hundreds of thousands. A few years before his death he shot his 5,000th stag.

...In his youth he suffered from severe lung trouble, and for a time he was as good as given up by the doctors. He often described to me this experience, and all that he had gone through, and he always spoke with intense bitterness of those who from one day to another would have pushed him aside as done with. As long as he was looked upon as Heir to the Throne and while people reckoned with him for the future he was the centre of universal attention. But when he fell ill and his case was accounted hopeless, the world at an hour's notice veered round and paid homage to his younger brother Otto....According to Francis Ferdinand's account, Count Goluchowski (then Foreign Minister) is said to have declared to the Emperor Francis Joseph that the Archduke Otto ought now to be given the establishment appropriate to him as Heir to the Throne, since he—Francis Ferdinand—"was in any case done for." It was not the fact itself so much as the manner in which Goluchowski tried "to bury him while still alive" that vexed and hurt the Archduke, whom illness had rendered more irritable. But besides Goluchowski there were numberless others against whom he bore a grudge for their conduct at that time, and the unparalleled contempt of the world which, when I became acquainted with him, had become a characteristic feature of his whole nature appears, partly at any rate, to date from these experiences during his illness.

Who can say whether the toxin of the tubercle bacillus influencing this man's relations with his fellows may not have precipitated the European upheaval? And now in Central Europe it is playing its sinister part again—a plague, a pestilence, attacking the young who are the hope of the future, maiming where it does not slay. This is no time for parleying with the foe. We, in England, must be up and doing, urged on by every motive of patriotism and humanity.

CHAPTER VII

SUMMARY AND CONCLUSIONS

IT will be manifest from what has been put forward in the preceding chapters that, throughout, there has been in the minds of the writers a central idea. That central idea has been explored and tested from many points of view. Moreover the initial successes and failures of early experimenters and pioneers have been most carefully reviewed and analysed. Our conclusions drawn especially from the failures may be correct or they may be erroneous or inadequate but much evidence has been accumulated in support of our thesis. Our own initial experiments, further experience, careful observation and preliminary successes obtained whilst working along the lines indicated at the outset and based on clearly defined principles have led to the gradual evolution of a still developing plan.

Throughout the preceding chapters, written separately or conjointly, but always in consultation, at varying intervals, as occasion arose, it will be seen by those who read between the lines that the permanent and "complete" settlement of the tuberculous individual has been constantly before our minds; that we realise that mere palliative treatment has been explored and found wanting and that the successful tackling of the problem as a whole required a keen appreciation of certain underlying and fundamental truths and a desire and capacity to apply principles to varying and developing conditions. It may be imagined, therefore, with what warmth we welcomed the appointment in April, 1919, of the Interdepartmental Committee on Tuberculosis and their Report (published in July of the same year) in which the complete scheme which we had so persistently and for so long advocated and put into practice was deemed worthy of being recommended for adoption by the Ministry of Health. That the central idea is not a new one is of course well known and freely recognised. It has

often been suggested or hinted at and even set forth in some detail, especially by Dr Esselmont in his admirable exposition of his Garden City for Consumptives. Dr Esselmont's ideas, however, appear to have been promulgated before the time was ripe for their reception. The medical world had definitely decided that the light open-air job was all that the consumptive required for his reinstatement. The "cure" of the disease by open air methods held the field and the public were unable to grasp any scheme so grand and comprehensive as that outlined by Dr Esselmont. It was looked upon as the dream of an idealist; no one had any knowledge of the working capacity of the consumptive, for the question had never been seriously considered. The conditions under which a consumptive could or would consent to live were unknown; the subsidy necessary for his welfare had not been determined and the psychological elements of the problem had not been studied or their importance appreciated.

On the appearance of the National Insurance Act, accompanied by the glowing and laudatory suggestions of "first-class hotels for the consumptive working man," the general public pricked up its ears and at once became interested in what appeared to them to be almost a new disease, tuberculosis—formerly it was known as the "decline" or consumption —and its immediate cure. It must be admitted that the "9*d.* for 4*d.*" cry served a very useful purpose, in that it led the more intelligent members of the community to examine a statement which, to those with some economic training, was contrary not only to their experience but to their preconceived ideas of matters mundane. Among those not so intelligent, an expectation of other good things became a part of their very being, and it was not long before the cry "a cure for consumption" was raised. Sanatorium treatment, previously only available for the well-to-do, was now to come within reach of the poor, and the wonders worked on behalf of the rich were about to be available for the less fortunate, because less wealthy, section of the community.

How these false hopes, built on sand, were overthrown

is now a matter of history. The unfulfilled promise of the enthusiastic but ill-advised politician has left the man in the street disappointed and discomfited, and the whole episode has shown how dangerous and misleading it is to encourage the building up of hopes on hypotheses only half probed and certainly but incompletely understood. The medical profession, whose advice was doubtless submitted to and accepted by the framers of the Sanatorium Benefit Clause of the National Insurance Act, blundered badly, and we must all take our share of blame for this, for we recognised but half the truth; and the only redeeming feature of the whole business is that the concentration of patients in sanatoriums under the Insurance Commissioners has allowed of the collection of valuable data which, carefully analysed, have opened our eyes to some of the real causes of failure. The results of sanatorium benefit have now been carefully scrutinised by the various Insurance Committees throughout the country and thoughtful physicians and statisticians have brought together most valuable facts and figures bearing on and illuminating the problem. One of the earliest and most direct outcomes of these investigations and studies was the demand for "After-care."

We have tried to indicate in the foregoing pages how comprehensive is this view of the question, though, incidentally, how limited is its scope when applied merely in a general fashion, for although an "early" case may be greatly helped by a sound method of "after-care," the question is extremely complicated and it behoves us to be very careful to avoid the dangers and pitfalls of over-expectation. We have, moreover, explored the elementary and fundamental factors in the problem of after-care treatment and have been led to the conclusion that the basis of all success is the economic factor. We believe that our conclusions are justified and that they are supported and corroborated by other workers in the same field. The study of the economic aspect of the problem has led us, as it has led others, a stage further in the consideration of the problem of tuberculosis; to an endeavour to

throw more light on the methods of prevention of this widespread disease.

Certain writers, e.g. Dr Esselmont, desire, first and foremost, to benefit the individual directly—others again have followed up the Garden City idea for the tuberculous with the object of attaining "prevention" by isolation, education, disinfection and the like. We believe that these two objects, at first sight apparently so different and divergent, may be capable of realisation by one and the same means.

The earlier conception of colonies for tuberculous subjects was associated with little more than the prolongation of the period of treatment of the individual. The newer conception of the duties of after-care and colony committees is based on the inclusion of the idea of partial if not complete separation or segregation of the tuberculous patient. The colony idea, then, at first at any rate, connoted no thought for the welfare of the community; it was concerned merely with securing the benefit of the sick individual.

The possibility of looking after, or providing for, a consumptive during his remaining lifetime was a hard proposition for our legislators to face; a harder one still for the consideration of members of Health Committees who have of necessity to keep one eye fixed on the rates and, too often, the other on the ratepayer. The philanthropist is ever ready to extend temporary help, just as the County Council is ready to provide funds for the temporary relief of suffering, but neither can be expected to contemplate with equanimity the shouldering of the burden of these cases for a lifetime. It is curious, but sad, that human sympathy for the damaged and afflicted evaporates so quickly, and for the tuberculous it has, up to the present, been wellnigh impossible to obtain even a little more than temporary outdoor relief. Any possibility therefore of obtaining help for the tuberculous over a term of years is little more than a phantasy, the public being disinclined to pay for anything for which it receives no immediate, substantial and material benefit. One of the primary instincts of the community, as of the individual, is to protect itself and no urging

of the claims of suffering humanity as a whole, will, apart from the satisfaction of these instincts, elicit the desired "practical" sympathy.

Temporary help and temporary help only is forthcoming and this, as we have seen, is useless so far as the tuberculous patient is concerned. Those therefore who put forward the case of the tuberculous for the particular benefit of the consumptive individual were doomed to failure and disappointment, and the proposal to form village centres, industrial settlements or Garden Cities received little attention and no encouragement so long as it applied to the individual only. When, however, it was recognised that the presence of these consumptive or tuberculous individuals was a danger to the community the problem at once assumed a very different aspect and increased importance, and began to receive more careful attention. Then compulsory powers began to be spoken of—powers to be placed in the hands of Local Authorities to compel certain types of patients to remain in institutions for fear they might infect others. No thought was given to the economic loss that might result from such a proceeding; the one, or at any rate the predominating, idea was self-protection.

We have at the present time, then, two main streams of thought converging on the treatment of the consumptive; one a diminishing current, concerned with the "cure" of the disease in the individual; the other, a swelling current, likely to become a torrent, concentrating on the prevention of infection of the healthy members of the community by some means of segregation—voluntary or compulsory. It is to be regretted that the healthy and the vigorous look upon the consumptive as a being altogether peculiar and apart—different from themselves. To the medical man he is a case or a patient. To the layman he is a being to be avoided, a tainted member of the community; the layman, indeed, wonders why the patient himself does not realise his peculiar position.

This attitude on the part of the layman is assumed, however, only when he is convinced that the man or woman is really consumptive. Before a diagnosis is actually made the

standpoint is altogether different; one of sympathy, as a rule, but not of fear. When, however, it becomes known that So-and-so is suffering from consumption, fear, prejudice and a sense of superiority at once assert themselves and the more obvious the disease the more pronounced this attitude. In many districts a persecution, almost active, by which the patient is driven to seek shelter in an institution or to adopt various devices to avoid attention, is initiated and pressed home. Time after time the health visitor, for the reasons set out above, is requested to cease her visitations, whilst the medical man may be tempted, deliberately, to refuse to notify the case.

It is computed that in some districts 25 % of the cases of pulmonary tuberculosis are unnotified, and although there are several reasons for this the chief one, undoubtedly, is the fear of detection, and the dread, on the part of the patient, of being branded as an outcast and a scapegoat. While, therefore, there is a mass of opinion aiming at the prevention of the disease by voluntary segregation, those who favour this are already encountering strenuous though silent and passive resistance. It is probable, however, that as soon as communities of the tuberculous come to be organised this very fear of detection will act as a powerful inducement to such persons to seek the sure protection and safe shelter of the community; moreover, signs are not wanting that the economic pressure of the outside world will also tend to drive them in. No compulsion will be needed on the part of the authorities. The economic law will act as steadily and as surely as it has always acted, and just as birds migrate to their feeding grounds so man will congregate where the food supply is most abundant and most readily obtained. It is a law of nature and must prevail.

Communities for the tuberculous, then, will not be such artificial and involuntary segregated bodies as some people would have us believe. Indeed the village settlement has a twofold justification; it not only offers employment to those who cannot be employed elsewhere, but it affords them relief from the economic pressure of the outside world. Why do we healthy subjects live and work in the environment in which

we happen to find ourselves? Unless we are of the wealthy and leisured classes we have to work and live where we can earn our living; similarly it will be found that the consumptive will live and work where conditions are favourable for him. It must be clearly understood, however, that the founding of such a community is a problem not so simple as it may sound. Any fantastic idea of acquiring a large tract of land and sending consumptives to live there and fend for themselves as best they may is, from the outset, doomed to failure. It is only by the most gradual steps that such a community can be brought into being and developed.

An Industry for Consumptives

Here we open up new ground and put forward a new idea to which the individual and the national mind will have to readjust itself. Just as the well-to-do seek special places and climates for the benefit of their health so we must get accustomed to the idea that those not so well endowed with worldly gear may, with equal propriety, seek some place suited for the prolongation of their life under the most favourable conditions possible. The only difference is one of "exchange" and economics. To provide the rich patient with the wherewithal to give in exchange for the amenities of life others work or have worked; but the man ordinarily dependent on his own exertion—having no one to work for him—must himself continue to work. He also can exchange the results of labour—his own—into food and comforts for himself and his family even if he cannot provide for them completely. The village community or industrial settlement—whatever it may be called—is designed to provide the opportunity for such exchange.

Since a village community cannot be called into being by a stroke of the pen, it is necessary to build it up gradually and quietly from the materials ready to hand. Towns and villages are generally called into being by the influx of inhabitants seeking food and work. An industry is started, it matters not what; a population immediately follows and con-

gregates around it. The people are there for the benefit of the industry, not the industry for the benefit of the people. Why not, whilst following the usual plan as regards the first part of the process, reverse the second and, founding an industry, run it for the benefit of the people? Set up your industry and the people will flock to it, but in this instance let the industry be set up for consumptives, let it be run for their particular and special benefit, and they will come—and stay.

The principle involved

Such is the process, a perfectly rational and feasible one, of starting a community for consumptives. The starting of an institution is quite a different matter—the latter is artificial, the crowding together of members of one sex, relieving them of all sense of responsibility and of proportion. Men or women remaining for long under an institutional régime are left in conditions in which they lose interest in life and become dependent on others for moral support.

A village community must not be a collection of almshouses, filled with pensioners spending their last years dependent on the charity of others. That is quite unnecessary, for these colonists or settlers are neither old nor infirm. Their strength is certainly diminished and their health impaired, but with encouragement and opportunity, both of which should be freely given, they will be able to contribute very materially to their own support and that of their families. The opportunity to work is what is required, and their earnings, together with a small pension, will in most cases enable them to become self-supporting, certainly to a much greater extent than were they compelled to enter into competition with the healthy worker in the outside world. All the artificial helps and make-believes of an institution should be avoided. Full liberty of conscience and action must be given, and guidance and help in the art of becoming as fully self-supporting as possible; the sapping of the moral character of the man by gifts and doles should be carefully avoided.

The settler must realise that he lives in a world of realities; that there is still a struggle for existence even though the external winds and conditions are tempered to the shorn lamb. The remaining fraction of the struggle we would certainly not do away with, for it is no less valuable, nay, necessary for the formation of character than is the struggle for existence in the outside world. Suitable work is by no means an unimportant factor in the treatment of the consumptive; indeed, it must be looked upon as the central pivot of the whole system. It is, however, the focal point of great and numerous difficulties. To live, a man must eat; to obtain food, he must work, unless another comes to his assistance.

In order, therefore, that a consumptive may live he also should work, and this he can do if he be given the opportunity and conditions in which to perform the selected tasks allotted to him. There is in the consumptive a potential, though a limited, source of energy. That energy can now be made available under known and well-defined conditions. Now, by continuous observation and research and by a study of various industries, the kind of work and the hours worked, a knowledge of the conditions of work desirable for a consumptive has been arrived at.

The problem resolves itself, then, into the practicability or otherwise of setting up industries which, run by consumptive labour, can be made to return a remunerative rate of wages. Can any means be found whereby the produce of such industry can compete in the ordinary market, for unless a market can be found disaster must quickly ensue? Our outlook must be much wider than that of employing men at a simple occupation at which a little money can be earned. The better the wage earned, the better the financial position of the consumptive settler, the less will be the call upon charity or the State for his upkeep. The greater the proportion of earnings to the subsidy, the greater also will be the man's own self-respect and his enjoyment of life. We must keep clearly in view the important problem of permanently remunerative industry; playing at a trade must not be countenanced under any circumstances.

The Training of the Industrial Worker

The days of the old craft guilds have, unfortunately, passed away. In those days a man was a skilled craftsman and turned out an article at which he had worked from start to finish. To-day there is no market for the product of such craftsmanship. Machinery has revolutionised the work of man, and without its aid much work is no longer remunerative. We have only to question the great bulk of the working men of to-day as to their occupation to learn that they are machinists; they feed a series of machines with material which they transform into parts of the article to be produced, each machine turning out some part or carrying out some minute detail, the processes combined being responsible for the final product. For the most part there is no special skill required for the job. It is astonishing how completely the workman's faculties may lie dormant during most of the operations—the pressing of a lever or the turning of a wheel at the right moment—called for from the machinist; and to this cause the unrest of the present day can, in some measure at least, be attributed. We educate a man's faculties and then allow him to go through life without calling for their use.

It is obvious then that when we talk about training a man to be this or that kind of skilled artisan or craftsman we are literally talking folly though we may not always realise the fact. In the factories in large centres, except in the case of the "key men," thorough training is never given and, in the sense we know it, is never called for. A man is set to look after a machine, and for this little technical training or skill is needed; the instructions given to him are brief and the directions are of the simplest. The machine does the work, all the man does or has to do is to set the pace.

Such is the environment from which, for the most part, our patients come, and their diminished powers have to be readjusted to their new surroundings. We have no alternative but to take as our model the normal industrial world, even though we may have to modify it in certain details.

We must, however, eliminate certain factors which would inevitably make for disaster to the consumptive. All isolated efforts at training, we are convinced, must inevitably prove futile. Individual labour cannot achieve a turnover by means of which the consumptive can compete with the healthy labour of the modern factory, and unless we can ensure a large turnover we cannot provide for the earning of a remunerative wage. But though the attempt to earn a good wage in the open market involves disability and death to the consumptive, we can modify methods and provide special conditions wherein the profits (on which, of course, no claim is made for the payment of dividends) can be used to increase the patient's pay. We believe that with care and perseverance success may be attained in this difficult task, even for large numbers—we have proved that it can be attained for small numbers.

We had first to realise, then, that the working man of to-day has in the majority of cases to be trained, not as the master of a trade but as a hand in a factory. Having realised this our task was greatly simplified; it amounted to training him to be a hand as, fortunately, he wants nothing more to enable him to earn his living. Our difficulties would certainly be infinitely greater were it necessary to teach each man to become a skilled craftsman.

As our community grows we have room for another type of worker—the consumptive who is already skilled and who desires to change his environment and improve his position. Such an one can always be accommodated in the settlement; his advent is hailed with delight by the colony authorities, for just as the factories in the outside world employ men in special offices and lay positions, so also the consumptive community has room and employment for all of them. One trade sets in motion another, subsidiary branches soon give evidence of sprouting and within a short time an office staff is required and develops; a packing department and a designing shop become necessary and come into existence, and, one after another, various side lines spring up. It is the knowledge that the concern is alive and progressing, that it can and will

employ its hands, permanently, that makes for the contentment of mind of the consumptive village settler. The life he leads is as near as possible to the old one to which he had become accustomed. The weekly wage is earned and regularly paid, and, finding it possible to live decently and without running into debt, the colonist settles down just as he would had he migrated voluntarily from one regular centre of industry to another.

It must not be supposed, however, that a tuberculous community is in all respects like a community of healthy persons. From the psychological point of view, the two, if not apart as the poles, are very different. And this difference is most marked in the "minor matters of the law." Whether we are brought into closer contact with the workers and their families than would normally be the case in an ordinary community, and thus gain fuller knowledge of their home life and a closer view of their mind and its working, it is impossible to determine, but, on the whole, small domestic trials and trivial details appear to affect the mental outlook of the consumptive to a much greater extent than they affect that of the normal individual. The exaggerated care they take of their health is very evident even to the casual observer. They will run no risks. These characteristics alone supply almost convincing evidence that the results of treatment and residence in a settlement should be infinitely more satisfactory than a system in which patients, after a short residence in a sanatorium, return to their former surroundings.

It may be that if we were brought into equally close contact with a community of healthy workers, we might meet with and note similar difficulties and peculiarities, but in any event it has been made clear to us that no narrowness must have any place in the conduct of the social side of our special village community.

The Family of the Consumptive

It may be, indeed it has been, suggested that the village settlement is an expensive method of attaining an end that might be achieved by simpler and less costly means. Is it not possible, it is asked, and would it not be equally effective to provide workshops in town, where, under a special arrangement these consumptives may work and earn their living? Emphatically, No! The village settlement does much more than provide a job for the consumptive, it also makes provision for his family to be reared in healthy surroundings and under such favourable conditions that their resisting powers may be built up and maintained.

At first sight it is not quite evident why this should be the case, for it might appear that to bring a healthy family into a village in which there are more consumptives than are found in an average normal village must increase the risk of infection to the healthy. On consideration, however, this argument is found not to be valid. Let us, for a moment, picture the life and surroundings of a typical and failing consumptive in a town. His working hours being cut down, his wage is also reduced; it follows that the total amount available for the purchase of food for the family is correspondingly low; consequently the family are underfed, badly clothed, and housed in a low-rented house in a poor neighbourhood. The facile descent of the consumptive working man down the social scale, is now well recognised, and, if lowered resistance plays any part in infection, the members of the family of such a man are in an all too favourable position to contract tuberculosis.

We have present, then, the two essentials for infection: (1) lowered resistance due to the economic straits to which the family has been reduced; (2) the massive dose of infective material available and active,—this latter the outcome of bad housing conditions. Neither of these factors is of and by itself responsible for the spread of the disease, but a vicious circle is set up within which conditions so often and so sincerely deprecated are fomented.

At the colony how complete is the reversal of this picture. The man receives a wage, which, together with his pension or subsidy, enables him to obtain an ample food supply for his wife and family. He is instructed how to deal with the infective agent—the sputum; he occupies a house in which there is some possibility of conforming to hygienic laws; and here "public opinion" is not against him. The children enjoy the inestimable advantage of good playing fields, instead of a dirty street in which to gambol and exercise. No wonder that the results of removal from the old surroundings to the new have been so beneficial.

Latterly, yet another objection has been raised. Does not the colony system so prolong the patient's life that the period during which he may act as a centre of infection is greatly increased? It is an unexpected argument, for have we not for years heard the results of treatment condemned, largely because it has not prevented the early death of the patient. Now, however, that a plan has been devised for the prolongation of life, the argument is inverted and turned against the man who is pointed out as an infecting centre or agent. The answer to such an objection has already been given. The chances of infection, where the colony system is properly carried out, are greatly reduced—time alone can tell how greatly—but there is no doubt that the community as a whole is protected by the transference of the tuberculous case from the crowded towns and cities to the colony.

The reason therefore for the advocacy of village settlements is twofold. (1) The prolongation of the life of the consumptive without increasing the infectivity of the case (the probability is that the infectivity will be very much decreased, but proof of this is, at the moment, wanting). (2) The healthy rearing of the next generation and the production in its members of increased resistance against, and immunity from, the disease.

These objects obviously cannot be attained by the mere provision, near towns, of workshops for consumptives even if the labour be subsidised. Such a method would put a premium on infection. It would serve no useful purpose; neither would

it conduce to the arrest of the disease or the prevention of the spread of infection. All the adverse conditions of the infected worker's home life would be ignored, and subsidised "labour" of an infective nature, with all its dangers to the community, would be allowed to wander at will through our towns. Such a plan should indeed be examined and weighed most carefully before it is adopted. The usual argument that workshops must be provided near towns, as town dwellers will not consent to go to the country, is in our experience but ill founded. It is based on two assumptions: (1) that the experience of sanatorium authorities is that town dwellers will not stay for treatment (with this contention we deal fully in the earlier part of this work); (2) that county dwellers flock to the towns in order that they may take part in amusements and excitement to be found there.

This is not by any means the whole or a correct statement of the case. County dwellers migrate to the towns because wages are higher and because more of life's treasures, comforts, pleasures and amenities are to be obtained with these higher wages. Where high wages are paid in the country and facilities are afforded for the exchange of those wages there is no dearth of dwellers. This has been proved time and again and is well exemplified in our colonies. Town people will not live in the country because they cannot *earn town wages* there. A village community in which there is the opportunity of earning good wages will not remain empty, or but partially inhabited, for long. That, very definitely, is our experience.

Beyond this, however, we contend, and hold our contention very firmly, that there is no justification for setting up an elaborate system, highly conducive to the spread of infection, simply because people will not do the right thing. This cannot be justified under any circumstances.

From the experience of other workers, by observing wherein they succeeded, and wherein they failed, by analysing and classifying the various factors in the life of the worker which make for good and ill, by a study of the economics of the disease and its relation to the prime factors of life—by actual observa-

tion of consumptives living under industrial settlement conditions, we think we are justified in maintaining that the methods here advocated for the treatment and prevention of tuberculosis are conceived on right lines. That much and important work lies ahead we cannot doubt. As with the writing of books, there is no end to it; of this we are well aware, but up to the present no valid or convincing arguments have been advanced against the fundamental principles here laid down, arguments that will modify our views in any marked degree. Further, the doubts expressed because of the gigantic nature of the task leave us cold and unmoved. The health of a nation is a big affair and the control of the conditions of infection in our midst is no less a matter.

Following the experience of the ages, segregation of patients suffering from infective diseases whether for short or long periods has been, and promises to be, our mainstay, and it is time we took our courage in both hands and acted up to the faith that is in us. Of all the infective diseases there are now but two not being attacked by some method of segregation, but these two are, to-day, responsible for more misery and suffering than all the others combined. Venereal disease we have not undertaken to isolate because we are ashamed. Convention has too firm a hold on us. Tuberculosis we do not isolate because of (1) fear and (2) sympathy. (1) We are afraid of the expense of the work and of the magnitude of the task, and (2) sympathy fetters us because we think we might be interfering with the solidarity of family life and affection. There is, however, plenty of room for sympathy in the village settlement, especially in the hospital which is set apart for advanced cases. Of all the departments of the colony none is more successful from the humanitarian point of view, none more advantageous to the general community than the section set aside for those suffering from advanced tuberculous lung disease. The cry of those who condemned the admission of advanced cases to a colony is drowned and for ever; the complete success of this procedure is assured; the "hospital for incurables" and the "home for the dying" with all their grisly

associations relegated to the region to which they belong. The "hope" of the consumptive is kept alight and encouraged to the end, the encouragement taking the extremely practical form of allowing him to observe other consumptives in the various stages of convalescence. The chances of "getting better" are always before his mind.

It may be asked "And what of the effect on the minds of those who are comparatively well?" Exactly the same as on our own. "The other fellow has it, not I," and in this may be summed up the whole psychology of the subject. Not necessarily side by side but under clearly defined conditions, all stages of tuberculosis may be accommodated on the same estate, to the great advantage of all concerned; it has simplified the machinery of running the various institutions which are now considered necessary for the treatment of the disease and, to an equal extent, it has simplified the running of the industrial settlement.

Village settlements when formed will differ from each other in a thousand details. The industries carried on cannot always be the same and the types of inhabitants will differ in different areas. It is impossible to sketch out any hard and fast plan. The only matter of importance is that the principles laid down should be grasped and followed. A newer and fuller opportunity will then be offered to the consumptive and to the community for a beneficial readjustment of their mutual relations.

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